

14097



Class

No.

Presented by  
R. J. Douglass, M.D.







Digitized by the Internet Archive  
in 2014







Entered at the Post-Office at Albany as second-class matter.

THE ALBANY  
**Medical Annals**

JOURNAL OF THE  
ALUMNI ASSOCIATION OF THE ALBANY MEDICAL COLLEGE.

EDITED BY  
HOWARD VAN RENSSELAER, M. D.

VOL. XIII, NO. 12.      DECEMBER, 1892.      \$1 A YEAR.

H. B. KIMMEY, Publisher, cor. Beaver and Grand Sts., Albany, N. Y.

# DERANGEMENTS OF THE LIVER.

## Horsford's Acid Phosphate.

has been used with good effect in diseases of the liver, and biliary disorders, where an acid treatment is indicated, and has especially proved a desirable medium to employ in chronic hepatic affections. By its action it stimulates the liver and promotes an increased flow of bile.

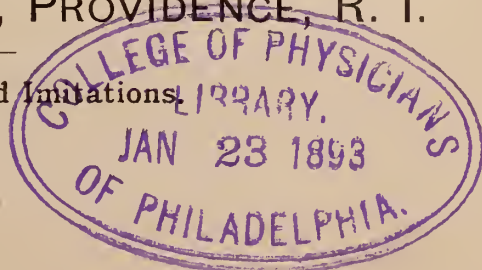
The Acid Phosphate is far superior to the nitro-muriatic acid of the pharmacopœia, in that it serves to assist digestion, and promotes in a marked degree the healthful action of the digestive organs.

Dr. O. G. CILLEY, of Boston, says: "I give it in all cases where there is derangement of the liver, with the most remarkable success. With my patients it has agreed wonderfully.

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.

Beware of Substitutes and Imitations.





# Storage Batteries

---

## FOR PHYSICIANS' USE.

Portable, Reliable. Once used  
Indispensable.

Cannot be excelled for Cautery  
Instruments and for small  
Surgical Lamps.

We have a complete Electric  
Plant for recharging them.

---

Cautery Handles and Knives  
Miniature Incandescent Lamps.

---

Hamilton Electrical Works,  
100 State St., Albany, N. Y.

# SVAPNIA

OR

## PURIFIED OPIUM

---

 **FOR PHYSICIANS USE ONLY.** 

Contains the Anodyne and Soporific  
Alkaloids, Codeia, Narceia and Morphia.  
Excludes the Poisonous and Convulsive  
Alkaloids, Thebaine, Narcotine  
and Papaverine.

SVAPNIA has been in steadily increasing  
use for over twenty years, and  
whenever used has given great satisfaction.

To PHYSICIANS OF REPUTE, not already  
acquainted with its merits, samples  
will be mailed on application.

SVAPNIA is made to conform to a uniform  
standard of Opium of Ten per  
cent. Morphia strength.

JOHN FARR, Manufacturing Chemist, New York.  
**C.N. CRITTENTON, Gen'l Agent, 115 Fulton St., N. Y.**

To whom all orders for samples must be addressed.

SVAPNIA IS FOR SALE BY DRUGGISTS GENERALLY.

---

## *A. B. HUESTED & CO.,*

DEALERS IN

Surgical Instruments, Dressings and Physicians'  
Supplies, Drugs, Chemicals, Sponges,  
Toilet Articles, Etc.

---

Manufacturers of TABLET TRITURATES, and COMPRESSED TABLETS.

---

SEND FOR PRICE LIST.

---

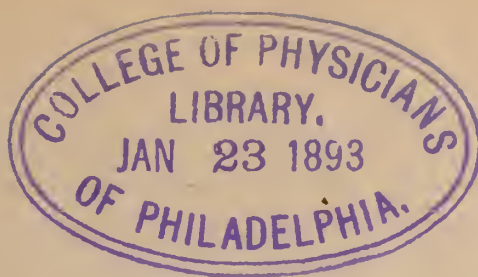
TRUSSES, ELASTIC STOCKINGS, KNEE CAPS and ANKLETS in Stock.

---

DRY CELL BATTERIES, GALVANIC and FARADIC, and ELECTRODES.

---

State Street, Cor. of Eagle,  
ALBANY, N. Y.



THE  
Albany Medical Annals

INDEX TO VOL. XIII.

Albany County Medical Society and the Albany Homeœopathic Society on the Medical Students' Bill . . . . .	19 M
Albany County Medical Society. Semi-annual address of the Vice-president . . . . .	225
Albany County Medical Society. The Annual meeting of the . . . . .	334
Albany Medical College. Commencement Day at the . . . . .	28 M
Albany Medical College Opening. Address by S. B. Ward, M. D. . . . .	319
Alumni Notices . . . . .	24 A
Alumni of the Albany Medical College Annual Meeting . . . . .	19, 170
Aluminium For Food-Containing Utensils . . . . .	158
Alvarenza Prize . . . . .	28 F
Antipyretics. Varied Uses of the Newer . . . . .	379
Antipyrin. Blackening of Teeth by . . . . .	254
Antisepsis for the Hands . . . . .	23 M
Aortic Valves, Sampson on Difficulties in Diseases at the . . . . .	154
Apples, The Remedial Use of . . . . .	378
Aristol-Europhen and Europhen. . . . .	384
Asthma. The Treatment and Management of. By Thos J. Mays, M. D .	366
Bacteria in Bottled Waters . . . . .	347
Bacteria in Drinking Water and the Means employed for their removal . .	129
Bacteriological Diagnosis . . . . .	30 A
Bacteriological Investigation of Europhen . . . . .	219
Ball, O. A. A discussion on the Treatment of Typhoid Fever . . . . .	9
Baths in Boston. Public . . . . .	152
Bendell, Herman, on Trachoma . . . . .	242
Body for Ten Dollars. Sold His . . . . .	27 A
Boyd, James P., on Treatment of Injuries to the Pelvic Floor . . . . .	231
Burns. The Treatment of . . . . .	314
Cancer . . . . .	317
Castor Oil. Palatable . . . . .	155
Catgut. Evils of . . . . .	379
Cholera Epidemic. The Progress of the . . . . .	272
Cholera. Inoculation Against . . . . .	348
Cholera. The further progress of the . . . . .	309
Cholera. The Threatened Epidemic of . . . . .	820
Cholera Victims. Cremation of . . . . .	343
Classen, F. L., on Eclampsia . . . . .	11 A

Clowe, C. F., on Goitre in West Africa . . . . .	370
Cobb, Wills S., on Tumor of the Left Testicle . . . . .	22 A
Cod-Liver Oil and Creasote in Consumption . . . . .	156
Constipation. The Medicinal Treatment of Habitual . . . . .	247
Contagious Diseases in Albany. Monthly Statement, 17 F. 28 M. 32 A. 192.	222
Corpse in a Medical College . . . . .	345
"Corpus Lutheum of Pregnancy." Lawson Tait on the . . . . .	153
County Medical Society. The Objects and Functions of a . . . . .	By Henry
Hun, M. D. . . . .	360
Craig, Jos. D., the Discussion on the Treatment of Pneumonia. . . . .	289
Creasote. On Poisoning by . . . . .	214
Creasote. The Elimination of by the Urine . . . . .	341
Creasote. The more the Patient can Tolerate the Greater the Benefit . .	152
Culver, C. M., on Orthoptic Training . . . . .	11 F.
Cure. Wanted a . . . . .	25 F.
Damages for Lost Crafts . . . . .	219
Deodorant for Iodoform . . . . .	254
Dermatological Congress in Vienna . . . . .	217
Diphtheria and the Treatment by Peroxide of Hydrogen. Some Clinical	
Features of . . . . .	25 M
Diphtheria and the use of Hydrogen Dioxide in its treatment . . . . .	381
Diseases and Accidents of Great Crowds . . . . .	380
Drainage Tubes. Objections to the Insertion of Into Wounds . . . . .	216
Eclampsia . . . . .	11 A
Electricity. The Therapeutic Value of . . . . .	215
Epistaxis, an Easy and Effectual Method of Plugging . . . . .	376
Ergot for Hypodermatic Use . . . . .	155
Erysipelas after Niehaus' Method. Treatment of . . . . .	253-255
Fluid with Meals. On . . . . .	218
Fracture of the Clavicle. The Treatment of By New Dressing. . . . .	313
Gall-Stones. Discusssion of the Treatment . . . . .	257
By S. R. Morrow, M. D. . . . .	261
By A. Vander Veer, M. D. . . . .	264
By S. Ward, M. D. . . . .	269
General Discussion . . . . .	269
Gordinier, Herman C., on the Diagnosis of Plurisy, with a Plea for the	
Early Removal of Pleuritic Effusions . . . . .	199
Gastric Activity in Infants . . . . .	156-157
Goitre in West Africa. By C. F. Clowe, M. D. . . . .	376
Gout and Fruit Eating . . . . .	22 M
Grafts. Damages for Lost . . . . .	219
Gynaecology and Obstetrics. International Periodical Congress of . . .	24 M
Hale, L. The Discussion on the Treatment of Pneumonia . . . . .	298
Head Injuries from Drunkenness. The Diagnosis of . . . . .	380
Hennessy, J. V. A Discussion on the Treatment of Typhoid Fever . . .	15
How Long Should a Convalescent from Diphtheria be Isolated? . . . .	255
Hun, Henry. A Discussion on the Treatment of Typhoid Fever . . . .	11
Hun, Henry, on the Objects and Functions of a County Medical Society	360



# ALBANY MEDICAL ANNALS.

Hydrotherapeutics. The Theory and Practice of. By R. F. McFarlane, M. D . . . . .	1
Hyperphoria, and Cases Illustrating the same . . . . .	15 A
Infants in France. Feeding of . . . . .	379
Influenza—Bacillus. The . . . . .	21 F
Jefferson Medical College. New Buildings for . . . . .	23 M
"Keeley Cure" Again. The . . . . .	29
Kinlock, O. F., on Medical Examinations for Life Insurance . . . . .	162
Labor, A New, Safe and Sure Method to Expediate Difficult Cases of . . . . .	252
Labors Without Internal Disinfection. The Results of Two Hundred . . . . .	221
Laboratory of Hygiene . . . . .	28 F
Letter to the Editor . . . . .	335
Life Insurance. Medical Examination for . . . . .	162
Luck's Erysipelas Treatment . . . . .	22 M
Mays, Thomas J., on the Treatment and Management of Asthma . . . . .	366
MacFarlane, R. F., on the Theory and Practice of Hydrotherapeutics . . . . .	1
Medical Associations. Meetings of . . . . .	15 L, 333
The New York State Association of Railway Surgeons . . . . .	334
The American Public Health Associations . . . . .	335
The Pan-American Medical Congress . . . . .	335
Medical Society of the State of New York . . . . .	29
Medical Colleges of the United States . . . . .	222
Medical Legislation in the United States . . . . .	27 F
Medical Prizes Offered . . . . .	28 F
Medical Specialty. How to Choose a . . . . .	310
Medical Students' Bill. The . . . . .	18 M
Mitchell, J. H. The Discussion on the Treatment of Pneumonia . . . . .	293
Morrow, S. R. The Discussion on the Treatment of Gall-Stones . . . . .	257
Munson, G. S., on Hyperphoria and Cases Illustrating the same . . . . .	15 A
Nasal Septum. Deviations of the . . . . .	1 F
Os. New Method of Securing Dilation of the . . . . .	316
Orthoptic Training . . . . .	11 F
Palatable Laxative. A . . . . .	152
Pan-American Medical Congress in the United States of Columbia . . . . .	17 F
Pelvic Floor. On Treatment of Injuries to the . . . . .	231
Pepsin Standard Advance . . . . .	217
Perineum. Protection of the . . . . .	343
Perry, T. K. A Discussion on the Treatment of Typhoid Fever . . . . .	20
Plasmodium Malariae . . . . .	315
Pleurisy, with a Plea for the Early Removal of Pleuritic Effusions . . . . .	199
Pleurisy with Effusion with Salyclate of Soda. The Treatment of . . . . .	254
Physicians to Inhabitants. Proportion of . . . . .	32 A
Pregnancy. Treatment of Vomiting of . . . . .	280
Prescription for Young Physicians . . . . .	158
Preservation of Hypodermic Syringe Needles. Lancaster on the . . . . .	153
Purification of Water by Chemical Treatment . . . . .	1 A
Purification of Water by Intermittant Filtration . . . . .	1 M
Quarantine Regulations Against Suspected Merchandise . . . . .	286

# ALBANY MEDICAL ANNALS.

Quinine. Pronunciation of the Word . . . . .	26 A
Reviews. A. B. C. of the Sweedish System of Educational Gymnasts. . . . .	31
An American Text-Book of Surgery, for Practitioners and Students. . . . .	382
Announcement of the New Materia Medica. . . . .	224
Annual of the Universal Sciences. . . . .	287
Bacteriological Diagonis. . . . .	30 A
Cancer. . . . .	317
Cerebral Meningitis, . . . . .	317
Consumption, How to prevent it, and How to Live With it. . . . .	29 F
Contributions of Physicians to English and American Literature. . . . .	317
Dictionary of Medicines. A New Pronouncing . . . . .	286
Disease of the Bladder and Brostrate. . . . .	29 M
Disease of the Mouth in Children. . . . .	29 M
Disease of the Nervous System. . . . .	287
Disease of the Stomach. . . . .	316
Electro-Therapeutics of Gynaecology. . . . .	317
Essentials of Medical Electricity. . . . .	30 F
The Essentials of Medical Physics. . . . .	30 M
Harvard Medical School Association. . . . .	224
International Clinics. . . . .	255, 383
Lectures on Tumors. . . . .	159
Lessons in the Diagnosis and Treatment of Eye Diseases. . . . .	31
Manuel of Operative Surgery. . . . .	223
Mediterranean Shores of America. . . . .	29 A
Modern Medicaments . . . . .	160
Modern Treatment of Hip-Diseases . . . . .	30 F
New Pronouncing Dictionary of Medicine . . . . .	286
Practical Manuel on Diseases of the Skin . . . . .	159
Principles and Practice of Medicine . . . . .	286
Principles and Practice of Bandaging . . . . .	315
Rifle Bullets. New . . . . .	214
Root, Arthur G., on the Deviations of the Nasal Septum . . . . .	1 F
Sabin, William B., on the Medicinal Treatment of Habitual Consti- pation . . . . .	247
Salyclate of Soda for Sprains. The Use of . . . . .	342
Salophen in Acute Rheumatism . . . . .	312
Sanitary Triumphs . . . . .	25 A
Science and Art of Midwifery . . . . .	223
Syphilis. In Ancient and Pre-Historic Times . . . . .	29 F
Treaties on Diseases of the Nose and Throat . . . . .	350
Uses of Water in Modern Medicine . . . . .	159, 317
Smith, Theobald, on Pathogenic Bacteria in Drinking Water and the means Employed for their Removal . . . . .	129
Salol and the Arsenite of Copper in the Treatment of Infantile Diarrhoea . . . . .	27 A
Suicides. The latest thing in . . . . .	220
Sulfonal in Insomia . . . . .	221
Surgical Kidney with Specimens. On By A. Vander Veer, M. D . . . . .	993
Therapeutic Gazette. The . . . . .	26

# ALBANY MEDICAL ANNALS.

Thesis in France. Suppression of the . . . . .	254
Trachoma . . . . .	242
Treatment of Pneumonia. A Discussion on the Indications for Treatment . . . . .	289
Treatment Directed to the Lungs . . . . .	293
Value of Alcohol in the Treatment . . . . .	295
Treatment of Cardiac and Cerebral Symptoms . . . . .	298
Typhus in New York . . . . .	22 M
Tubercle Bacilli and Tuberculin. Action of Dead upon the Animal organism By William Vissman, M. D . . . . .	353
Tuberculosis by Bed-Bugs. Conveyance of . . . . .	250
Tuberculous Sputum, Dead Bacilli in . . . . .	157
Tucker, Willis G., on the Purification of Water by Chemical Treatment	1 A
Tumer of the Left Testicle. By Willis S. Cobb, M, D . . . . .	22 A
Typhoid Fever. A Discussion on the Treatment of . . . . .	
Indications for Treatment. By O. A. Ball, M. D . . . . .	9
Dietetic Treatment. By D. Henry Hun, M. D . . . . .	11
Antipyretic Treatment. By J. V. Hennessy, M. D . . . . .	15
Value of Alcohol in the Treatment. By S. B. Ward, M. D . . . .	27
Medical Treatment. By T. K. Perry, M. D . . . . .	20
General Discussion by the Members . . . . .	22
Typhoid Fever. The Treatment of . . . . .	254
Urethritis. A New Method of Treating Acute . . . . .	345
Unique Hospital . . . . .	155
Van Allen T. F. C. The Semi-Annual Address of the Vice-President of the Medical Society of the County of Albany . . . . .	225
Vander Veer, A. On Surgical Kidney with Specimens . . . . .	193
Vander Veer, A. The Discussion on the Treatment of Gall-Stones . . . .	261
Van Rensselaer, Howard. On the Purification of our Drinking Supplies by Intermittent Filtration [one plate] . . . . .	2 M
Van Vranken, A. T. The Discussion on the Treatment of Pneumonia . .	295
Vaporizer. A Home-Made . . . . .	250
Vissman, William. On the Action of Dead Tubercle Bacilli and Tuberculin upon the Animal Organism . . . . .	353
Ward, S. B. A Discussion on the Treatment of Typhoid Fever . . . . .	17
Ward, S. B. On the Albany Medical College Opening . . . . .	319
Ward, S. B. The Discussion on the Treatment of Gall-Stones . . . . .	264
Water Supply of the Paris Suburbs . . . . .	344
Where the Noise Comes From . . . . .	26 A
Yeast on Typhoid Bacilli. Action of . . . . .	251





# THE Albany Medical Annals

---

VOL. XIII.

JANUARY, 1892.

No. 1.

---

## THEORY AND PRACTICE OF HYDROTHERAPEUTICS.

BY DR. R. F. MACFARLANE.\*

**HISTORICAL.** According to a legend of prehistoric times, women of the stone age precipitated themselves into the sea after their accouchement, this is the first intimation we have of the practice of hydrotherapy.

To Hippocrates the value of hydropathy was well known and he gave very exact directions for the employment of water as a therapeutic agent in many diseases. Musa was successful in treating the Emperor Cæsar Augustus of an affection of the liver by the use of hot water and vapor baths followed by cold affusions. Horace and Marcellus were also patients of Musa. Pliny and Sen-tonius mention the success of Charmis who also practiced hydropathy at Rome, and its employment must have been successful, if we can judge by the colossal structures like the baths of Nero at Bahia, and those of Caracalla at Rome.

Although Galen criticised the severe treatment pursued by Charmis, he often prescribed the warm bath followed by cold douching, together with cold water internally. Paracelsus and many others advocated the use of cold water in fever and chronic affections during the middle ages. In the sixteenth century appeared the most extreme of all its advocates in the person of Pomone who treated all nervous diseases by baths of a temperature of 50 F for six, twelve and twenty-four hours.

In 1697 Floyer of Litchfield published his treatise on hydrotherapy and built the first sanitarium devoted to its practice exclusively.

In Great Britain a great impetus was given to hydropathy by the labors of Currie, who first demonstrated the physiological action of water upon the healthy body, and then studied its therapeutic action in disease. His labors were most patient and exhaustive; and in his experiments he made use of the thermometer in the rectum and axilla, so that

---

\*Read before the Albany County Medical Society, December 2nd, 1891.

while investigating the physiological action of water, he invented the clinical thermometer and indicated its future use. Later experiments have not depreciated the value of his work, every page of which shows that benefit can be obtained by the careful employment of cold water especially in the febrile state.

Thirty years later the invention of Scientific hydrotherapy was ascribed to an illiterate Silesian peasant named Priessnitz; and that which was not attained by the arduous labors of distinguished physicians from Hippocrates to Currie, was accomplished by a man of no medical attainment.

Priessnitz demonstrated the value of his treatment and made it popular by his results. Of 7,500 patients reported to the police at Grafenburg in a certain number of years there were only 39 deaths. Priessnitz gradually increased the number of his applicances and modes of application. The discipline maintained was severe. Many were hard drinkers, gourmands, plethoric, idle, lazy upon arrival, but they had to submit to severe regime, out-door exercise, water externally and internally, severe diet, no beer, wine, tobacco, coffee, nor tea, and early hours were imperative.

The most valuable additions which were made were the wet sheet, the wet compress, the douche of varied forms, partial baths and the sweating pack; these were all the inventions of Priessnitz. As he gained experience he changed his modes of administration to suit each case, for although no diagnostician, he was a quick observer and careful to a degree in the treatment of serious cases.

Notwithstanding the arduous labors of scientific physicians in the field of hygienic medicine and the valuable literature which has accumulated on the subject in Europe, little attention has been given to it here, and less dependance has been placed upon it by practitioners generally. In other lands it has full recognition and is taught in the schools of medicine in a manner substantially as follows:

Hydrotherapy reasons and teaches that:—First, it is the *vis medicatrix naturae*, nature's own efforts to recuperate, that cures the patient, if he be restored to health, all that art can do, is to see that nature is not interfered with. The advocates of hydrotherapy generally abstain from the administration of medicaments although their use is not strictly forbidden, and limit themselves to the safer and simpler therapeutic agents afforded by nature.

Secondly: Air, water, diet, exercise and rest are required to preserve health, and disease results when the body is deprived of a proper proportion of any one of them, and, in the morbid condition these same agents or elements modified



strictly according to the needs of each case are the most certain means to effect or cure in chronic disease.

*Internal administration of water.* The dietetic necessity of water is known to all. Life ceases without water. All our tissues contain more or less of it, and it is indispensable to their healthy action; it is constantly passing away and must as constantly be renewed.

*Water used externally.* Let us now consider the physiological action of water applied suddenly and momentarily to the body and later on we will study its prolonged use as an antipyretic agent in the treatment of febrile conditions. A person in good health upon receiving a cold douche, experiences at first a sensation of cold which extends throughout the whole body, the skin becomes pale and a general trembling follows. When the douche ceases he experiences a sense of well being, the circulation becomes more active, the respiration more profound, the skin becomes rosy, he feels stronger and has a sense of exhilaration. We are led to inquire the effect of the cold douche upon peripheral circulation, upon the heart, and upon the blood constituents. Authors agree that the application of cold water exteriorly contracts the arterioles; and if the continuance be brief, a dilatation of the capillaries follows. The temporary application of cold water excites vaso-contraction and neutralizes vaso-dilation, but when reaction comes on, the opposite effect is noticed, the vaso-dilators are re-established in activity, and the vaso-constrictors are quiescent.

*On the blood.* Thermis discovered that the cold water treatment increased the number of blood corpuscles, having many times estimated them by the method of Haysan; he is also of the opinion that the physiological value of each of them is higher.

*On circulation.* Although the phenomena attending the application of a cold douche to the body upon the respiration has been less studied, and experimenters conflict in this statement, it was shown by Johnson and Dujarden Beaumetz, that often after a douche of one minute, the inspiration increased from two to eight per minute, and the symptoms were as follows; after the douche there was a momentary arrest of respiration, succeeded by profound inspirations. When reaction was established, the respiratory movements increased in number and intensity.

*On body heat.* Delmas, by carefully recorded experiments, which have since been confirmed, has shown that the caloric phenomena are peculiar. After the chilly sensation is felt, the temperature is found to be reduced at least 0.4 F. During the period of reaction, although there is a sense of warmth prevailing the body, the reduction of temperature is

prolonged and may amount to 1.50 to 2.0 F and the abatement continues two hours after the douche.

*On the nervous system.* The effect of hydrotherapie is no less remarkable upon the nervous system. The cutaneous reflexes bring into action the nerve cells of the spinal cord and maintain an equilibrium between the spinal and cerebral functions. This modifies the circulation in the nerve centres, and according to the mode of application of cold water we can produce excitement or soothing i. e., a tonic or sedative effect.

*On nutrition.* Under the first effect of the cold douche, the blood passes rapidly centribitally to the different viscera from the extremities and return to the periphery at the time of reaction. The greater activity of the circulation causes an increase of chemical action and promotes rapid metamorphosis, the whole body participates in the beneficial effects, the appetite improves, the food is better assimilated, the body better nourished.

*Therapeutics.* We have time only to glance at the use of water in inhalations, injections, and irrigations, which we practice daily and by means of which we subdue local inflammation. Hot fomentations often stand in good stead, and every one knows the value of a napkin wrung out of cold water and used as a compress. By means of the ice bag or a Leiter's coil, through which cold water passes, we have an antiphlogistic agent to which we often resort. An enema of cold water assists in reducing the temperature in hyperpyrexia, it will allay thirst as well as if taken by the mouth, and can be administrated when the patient cannot or will not swallow, and is especially valuable in acute catarrh of the large intestine.

Turkish, Russian, and Roman baths are invaluable agents in the treatment of catarrh, gout, rheumatism, bronchitis, syphilis, and many other forms of inflammatory and febrile disease, for tonic or stimulating effect the full cold baths or douche of short duration is best, and the result is better when the patient keeps in motion by rubbing himself; the effect is also increased by keeping the water of the tub in motion. There are also the rapid washing down with sponge or towel, the needle and spouting douche, and pail douche, directed to the neck and back, the cold douche of momentary duration, the flowing hip bath, and foot bath, etc. The effects of these applications upon a person of some reactive power are exhilaration, increased activity of the circulation, great muscular force, improved appetite and digestion. If the duration and the temperature of the bath be changed or if a warm full bath alternate with a cold douche or cold full bath the effects may be greatly altered and thereby adapted



to various conditions. A calming or soothing effect may be best obtained by means of the wet sheet, for the whole, or part of the body, the full cold bath of long duration without motion, the sitz bath, the shallow bath and the foot bath without motion, also the full bath of higher temperature. These effects are succeeded by depression due to abstraction of heat, diminution of nervous irritability, sensation and mental activity. The action of the heart is less rapid, the muscles are relaxed, a feeling of lassitude and tendency to sleep ensue.

There is no end to the modifications employed by scientific hydropathists to produce certain necessary results. The effects of the wet sheet may be altered by changing it often, or by sprinkling it with cold or warm water; by having it fit closely around the neck or reach only to the axilla. The sedative and stimulating effects may be combined or alternated by using first a wet sheet or wet blanket for a time to produce perspiration and afterward a more or less cold bath, douche or sponging of short duration. Diseases may be for our present convenience divided into two great classes:

1. Those in which it is necessary for the physician to lower or reduce his patient to a condition of health.

2. Those in which he is called upon to assist in raising the patient to that standard.

In the former are included those of a plethoric or inflammatory type, in the latter those characterized by a reduction or loss of vital force. In the cure of both forms of disease water plays the most important part and the treatment by means of the wet sheet or pack is the cheapest, safest, most convenient, and most effectual we have, and may be arranged as follows; over the mattress lay a strong blanket, on this lay a linen sheet, well rung out in cold water so as to be only damp; on this the patient is laid and the sheet tucked in well around him, several thick blankets are laid on top and also tucked in so that it is impermeable to the air. Presently the natural heat of the body vaporizes the moisture of the linen sheet, and in a few moments the patient experiences instead of a sensation of chill, a pleasurable feeling of warmth, due to the relaxation of the skin, cleaning of the pores, equalization of the circulation, and freeing of the blood of impurities. The temperature of the whole body becomes equalized. If congestion of internal organs be present it is soon abated, the nervous system is soothed and irritation allayed and the pain subsides.

In those affections in which it is necessary to raise the patient to a higher standard of health, water has a grand role. In these cases we may make use of the cold douche, or cold bath of short duration, after the tonic effect of which the

patient should have exercise to stimulate the return of the blood to the healthy reaction.

Let us consider the effects of the simple thermal waters, those ranging from 80 to 150 F. Taken internally the stomach is cleansed, the secretion of saliva, bile, pancreatic juice, and urine is increased, tissue changes accelerated, effete matters carried away, retrograde and reconstructive metamorphosis expedited.

The simple thermal baths are invaluable in the treatment of insomnia, delirium tremens, and other conditions of excitability of the nervous system; they are used with benefit in neuralgia, hyperæsthesia, painful menstruation, and hysteria, and give great relief to wounds, and painful joints. In chronic muscular rheumatism, and sciatica and in the agony caused by the passage of biliary calculi they often allay the pain.

The drinking of these waters is of therapeutic value in irritable affections of the stomach, intestines, and throat with spasmodic cough, in cardialgia, constipation from lack of secretion of bile and intestinal juices, and is also indicated in chronic rheumatism, gout, and syphilis, because water increases tissue changes.

Hydropathy includes sea bathing, which should not be pursued by the invalid unless so advised by his physician. Salt water baths may be hot or cold according to indications.

Delicate persons should not remain in the water more than one minute, for many others five minutes is long enough; the rule being to leave the water as soon as reaction comes on, dress, and take a brisk walk.

*Simple fevers.* When the heat is great and equally distributed, the bath should be repeated as often as the temperature rises; when the temperature is not high, warm sponging or wet sheet or pack is best. If the heat is not equally distributed, it is desirable to equalize the temperature which may be done by warm applications to the extremities, and cold to those parts abnormally heated. In intermittent fever cold bath or wet pack should be given on the approach of the febrile stage, and a warm or hot full bath on coming out. If the sweating is profuse, sponge with tepid water. If constipation is present an injection of tepid water should be given. In diarrhœa, an injection of cold water; abdominal pain or retention of urine is helped by clothes wrung out of cold or hot water.

*Typhoid.* The labors of scientific practitioners of hydrotherapie, teach us that the removal of heat by the application of cold water is of great value in most cases attended by hyperpyrexia. We are warned to be on guard for fear of heart failure in adynamic cases, in profound cachexia or



where organic lesions are present. A careful physical examination must be made, and due consideration given whether the organs of the body will support the treatment, and the temperature of the bath should be governed by the age and vitality of the patient. In many cases it will be more convenient to use the wet sheet or sponge. The reduction of the mortality due to typhoid fever by the use of cold water bathing, has no doubt riveted your attention. Von Ziemsen's method is to place the patient in a bath of warm water'' 75 F and gradually reduce the temperature in the water to 65 . The patient remains in the bath fifteen minutes or until the temperature begins to fall. If the patient's temperature begins to fall before the water temperature is reduced to 65 F no more ice is added. To some patients several baths were given before any reduction of temperature was observed. It is unsafe to allow the temperature to fall too rapidly because of tendency to collapse. If insomnia is present, cold water is applied to the head by means of a sponge or Leiter's coil.

The Brand method has been used with still greater success and where it was pursued has reduced the death rate. It has been adopted in the Prussian army and the mortality reduced from 25.8 per cent. under the use of drugs to 9.1 per cent. under the strict employment of cold water. Brand's method is as follows: any patient having a temperature of 103 F is placed in a bath of 60 F for fifteen minutes or until the temperature falls, the temperature is taken every three hours and when found to have reached 103 F again, the bath is repeated. Its faithful administration during the first two weeks of hyperpyrexia renders its later use unnecessary. The effects produced are regulation of the circulation, respiration, digestion, secretion, excretion and nervous phenomena. In some instances delirium and stupor disappeared with the first bath, headache was relieved, but often returned when the temperature arose. In some the pain is increased, but this is avoided by sponging the head with cold water or putting on an ice bag. Diarrhœa increases at first, a stool following each bath, but this ceases very soon.

It has been shown by Wielland Rogue of Lyons that under this cold water treatment there was increased elimination of toxins by the urine, and to an extraordinary extent greater than by using any drug. To the rigid persistent use of cold water baths in the German army is inscribed the low death rate, due in the main to the purification of the blood of toxic material and the consequent supply of better nourishment to the brain, heart and other viscera. Five hundred lives are saved in the army alone every year by the substitution of cold water for drugs.

The internal administration of small quantities of cold

water often repeated must not be forgotten, it is invaluable. In New York hospitals asthenic patients are treated to a glass of champagne just before the cold bath and immediately after they are given a drink of hot milk punch. Those that cannot be moved are sponged with cold water.

Let every physician put this in practice early, considering first the condition of the patient as indicated above. Keeping a chart showing the changes due to the first baths. Many patients who at first would not submit to bathing with cold water or endure the wet sheet, will afterward beg for its administration. If after four or five baths the patient is more quiet, has less delirium, if his breathing is less hurried, his heart's action slow and more regular, if he begins to perspire and wishes to go to sleep, there is surely a good result. If there be feeble heart's action, rapid respiration, cold extremities, harm is being done; give alcohol and substitute the the wet pack. In feeble children and the aged with cold extremities, toxæmia, profound anamia due to hemorrhage, or when from this or cerebral changes there is feeble heart's action, use the wet sheet or sponge.

If we can change the fever from a continued to an intermittent type we have surely gained something.

*Pneumonia.* Friendt advocates the use of ice bags applied over the affected lungs; he treated one hundred and six cases, ten of which were double with only three deaths.

Lees treated eighteen cases and all recovered. He uses ice bags in every case, except the feeble, young, and aged. The temperature falls at once 3-4 degrees. The bag is then removed and the temperature rises but not to the same height as before. He had to apply heat to the feet of some patients.

*Scarlet Fever.* Some celebrated physicians have pursued the middle course and, used a mixed treatment in this and other diseases, employing tepid bathing often, in some cases cold baths as in typhoid. When adynamic conditions prevail warm baths, and internally alcohol, comphor, digitalis, coffee, etc. If acute nephritis, hot bath and pack in blankets; when patient is in bath keep the temperature up by adding hot water, duration of bath fifteen minutes.

Other eruptive fevers are treated by hydrotherapists by cold water baths, or wet sheets, or both, according to the symptoms in each case, upon the same general plan as set forth for simple fevers.

We all practice it in our treatment of neuralgia, acute inflammation of the eye, of the ear, in parotitis, tonsilitis, laryngitis, diphtheritis and croup, by local application of hot or cold water and inflammatory conditions of the viscera we



treat the same way. Much could be said for the efficacy of baths in diseases of the skin.

We have spoken before of the use of hydrotherapy in chronic disease. It has a wide field in the treatment of deformities. The douche may be employed in lateral curvature of the spine with great advantage, it is often helpful in the deformities due to the paralyzes of polio-myelitis anterior, in torticollis and lumbago. We have seen great benefit arise from this cold douche in melancholia, anæmia and chorea, and hydropathists have been very fortunate in the treatment of hysteria and irregularities of menstruation.

Every city in Europe of good size contains many hydropathic establishments. Many physicians study the science and send their patients to be treated at places where they know the principal and assistants will carry out the treatment they prescribe, many establishments send out skilled nurses who follow at the homes of patients the rigid treatment desired.

Hydrotherapy has been practised very little outside of the large establishments devoted to its hydriatic treatment, which, removed from the centres of population, are under physicians pledged to carry out its principles. This is very well for the rich, and the conditions are surely the best under which it can be practiced, but it will be very circumscribed if all classes cannot enjoy its benefits. It is not limited to the elegant sanitarium, for every physician can prescribe the bath, douche, hot or cold half-baths, hip baths, foot bath, wet sheets, etc., and will as heretofore enjoin early hours, proper nourishment, fresh air, and exercise, so that without the ozone of the mountains, he may nevertheless do no more for his patients toward the preservation of health and cure of disease.

---

## A DISCUSSION ON THE "TREATMENT OF TYPHOID FEVER."

*Indications for Treatment, by O. A. Ball, M. D.*

At the Meeting of the Albany County Medical Society, Nov. 18, 1891.

WE have for consideration the indications for treatment of an acute infectious disease of a specific form. Characterized by a gastrointestinal catarrh a febril movement of continual type. Varying in duration from ten to twenty days or more, and in intensity from one to several degrees above normal temperature. Marked by great wasting and extreme prostration of the system and accompanied by certain nervous phenomena of greater or less urgency and recognized after death by constant lesions of the solitary and aguminate glands of the intestines together with enlargement of the mesenteric glands and of the spleen, a disease which attacks any period of life, though not common in early infancy or extreme old age. As before stated typhoid fever always presents uniform and constant lesions, so constant and so cer-

tain that we can positively determine after death if not before, whether the disease was present in a given case or not.

If then we have a specific disease, we must necessarily have a specific cause producing that disease. And our first indication for treatment is to destroy that cause if it can be done, or failing in that, to eliminate it from the system as rapidly as possible.

Having no antidote as yet for typhoid fever, have we any means at our disposal to fulfill the second indication, with safety to the patient? This question cannot be fully discussed in a paper of this character at this time. Briefly we may say that no system of treatment has as yet been devised that will with certainty and in every case shorten the course of the disease for one hour so far as we know; that certain methods of treatment seem to modify the violence of an attack in some cases is true, but that the disease is shortened in its course is very problematical to say the least. There are three great emunctories through which we may act in aiding nature to eliminate disease producing elements, all of which should be called into active co operation in this disease. Our treatment in other respects must be governed by symptomatic indications, always bearing in mind and attempting to ward off those conditions that are likely to prove destructive to our patient.

Our first care should be to instruct those having charge of the patient how to disinfect the dejections from the patient, not forgetting that the urinary secretions are just as dangerously infective as are those from the bowels. For disinfecting it is best to use chloride of lime, four ounces to the gallon of water; at least a quart of this solution should be placed in the pan in which the dejections are received, the same to be thoroughly mixed and allowed to stand an hour before emptying into closet. The patient's buttox, thighs and genitals should be bathed in an aqueous solution of carbolic acid after each movement of the bowels or bladder. This personal hygeia of the patient is just as necessary in the mild as in the more grave forms of the disease and should be continued for at least ten days after all manifestations of the disease have ceased. As a rule patients with a mild form of fever, say one whose temperature does not exceed 103 with a decided morning remission do not need nor are they apparently benefitted by any special course of treatment. Such cases need careful nursing, fresh air, clean clothing, unstimulating diet as free from starch as possible and careful watching by the medical attendant, that no complication may find him off his guard. They usually progress to a favorable termination without much medication, or any in fact.

We should try and ascertain from a careful study of our patient, and his surroundings, which of the most usually fatal forms of the disease, he is most liable to succumb to if to either, and try to anticipate and prepare for the danger before it is upon us if possible. In my opinion the usual diarrhoea that accompanies this disease should never be interfered with, without there are other indications other than it that demands it.

The most serious cases we meet in my experience are those attended by constipation from the first. The usually fatal forms of the disease in uncomplicated cases are heart failure, cerebral paralysis,



peritonitis from perforation and intestinal hemorrhage, and infrequency about in the order named.

The diagnosis between the two conditions last named is not easy to be made especially when the hemorrhage is concealed, and yet it is very important that it should be, for our patient's life may surely depend upon our accuracy in this instance. Both are attended by sudden collapse and a fall of temperature below normal. To be as brief as possible our main diagnostic point is in careful percussion of the abdomen. If the collapse is due to hemorrhage there will usually be dullness in the right umbilical and iliac regions in as much as the hemorrhagic ulcer as well as the perforating one is almost invariably in the lower portions of the ileum.

In perforation the escaping gase will so distend the abdomen that the liver dulness will be lost. This is a point that must not be forgotten, for while the chances of recovery is very slight, from abdominal section in typhoid cases, yet the indications point too strongly to that procedure to be neglected if we would give our patients all the chances for recovery. If then we are satisfied that perforation has occurred, there should be no time lost in calling in a surgeon to perform a laparotomy.

Danger from high temperature calls for antipyretics in some form whether internal medication or externally applied will be determined more by the condition of the heart and nervous system, than upon the theory that cold water is the only desirable means of lowering temperature.

A frequent and feeble pulse calls for alcholic stimulants. Sleeplessness and restless delirium call for active interference.

Cerebral paralysis I apprehend is usually due to the specific poison of the disease and is often relieved by an energetic cathartic and especially one like calomel that calls the kidneys into immediate activity with the bowels.

Epistaxis can usually be controlled by pressure.

Hemorrhage from the bowels if excessive is a condition of extreme danger, and requires very careful management to avoid sudden collapse and immediate death.

Bronchitis is present in so many cases that it may be considered one of the phenomena of the disease and not a complication. And when severe is an element of danger that should not be overlooked.

Embolic abscess and periostitis if they occur are to be treated on general surgical principals.

Hypostatic pneumonia is a resultant of a weak heart, and best controlled by attention to that organ. Thrombosis is liable to occur in any of the veins, and especially in the cerebral scienses. Meningitis is so rarely present in typhoid fever that it cannot be classed as belonging to its catagory of symptoms, in fact the serous membranes pretty generally escape unharmed without they have been previously diseased.

### *Dietetic Treatment of Typhoid Fever, by Henry Hun, M. D.*

Shall we not be guided in our selection of a diet for typhoid fever by the same factors which lead us to select our diet in a condition of health, that is by our appetite and our taste. In a condition of health

from time to time a keen appetite or hunger causes us to eat and no one needs to be told that this is essential in order that we may live. Furthermore, by our taste we select from the thousand things in the world that might be eaten, certain things which we like; thus, to take only one example, from the great number of saline substances we select salt (chloride of sodium) as a very desirable addition to our food, and we cannot doubt that in the course of years, not only the individual but the race is gradually led to select those things which, on the whole, are the most healthy, and that it is better for us to eat chloride of sodium than chloride of ammonium or any other saline substance. It is true that in some cases the appetite and taste are perverted, and need to be restrained and guided, but in the great majority of cases they lead us to take those things which in a general way are best adapted to our needs.

Now if it be true that disease is a process by which the system removes from itself some noxious thing which has entered it, and that the diseased or pathological processes are merely physiological ones so modified as better to preserve the integrity of the body and are in their nature curative, may it not be that our appetite and taste become changed in disease in such a way as to aid in the progress of recovery? It is certainly true that in typhoid fever the normal appetite and taste are profoundly altered and may we not get some light on the proper diet in this fever by studying the altered appetite and taste? Almost as a universal rule in typhoid fever the appetite and taste are modified from a condition of health in these three ways: 1st. There is a great thirst; 2d, there is a loss of appetite for meats and vegetables (so-called hearty food), and for food containing sugar (sweets), and 3d, there is a persistence in a greater or lesser degree of appetite for liquid food of which milk may be taken as the representative; and, for my part I believe, that we have no better indications for the dietetic treatment of typhoid fever than these three which are furnished us in the perversion of the normal appetite and taste in this disease, and in the short time at my disposal I shall briefly consider each of these indications for treatment.

*First.* In typhoid fever the patients suffer the most extreme thirst and to refuse them water is to do what is apparently cruel, and what is, I think, as a matter of fact, harmful. On account of the high fever a very large amount of water passes through the skin, as both sensible and insensible perspiration, and the diarrhoea still further takes water from the system. As a consequence the skin becomes dry, the tongue parched and heavily coated, there is very little secretion from the salivary, pancreatic and intestinal glands, and all the organs and tissues of the body are very dry, so much so that autopsies of cases of typhoid fever are almost always dry autopsies, there scarcely being any fluid running from the tissues.

In addition to this we have a peculiar degeneration taking place in the internal organs, especially the liver, kidneys and heart, to which great attention has been paid and to which has been attributed the dangerous cardiac weakness often present in this disease. This is the so-called parenchymatous degeneration which consists in the separation of little particles of solid albuminous matter from the fluid protoplasm of the cells, giving the cells a granular appearance, and to these degen-



erated and weakened cells, especially in the cardiac muscle, the death of the patient is referred. The little granules in the cell disappear on the addition of acetic acid and are simply solid albuminous matter, and the thought must occur to us, that they are due to the fact that there is not sufficient water in the cell to keep them in solution. This parenchymatous degeneration is found in the viscera of animals which have been exposed for a long time in a hot box to high temperatures, but have animals thus exposed to high temperatures who at the same time are given large quantities of liquid food do not show this parenchymatous degeneration, a further proof that the protoplasm becomes solid simply for want of water, and that this can be prevented by furnishing the system with a large quantity of water. So that from theoretical grounds the administration of water in typhoid fever is called for. Certainly in practice I am convinced that where we do give large quantities of water to our patients with typhoid fever all the symptoms of the disease are rendered less severe, and even the diarrhoea is not increased, and, I believe, that the good effects of cold baths in many cases is due in part at least to the absorption of water by the skin during the bath. Therefore, as the result of theory and practice we are led to follow the demands of the appetite in typhoid fever and to give the patient large quantities of water. This he will take readily enough in the early stages of the disease, and when he becomes dull or comatose, and in no condition to appreciate the need for water we should still urge him to drink it at regular intervals.

*Second.* In typhoid fever there is a great aversion to hearty food, such as meats and vegetables, and when such food is taken nausea and vomiting are apt to result, and Zuezer has found that there has been a rise of temperature immediately following the ingestion of such food. This aversion to hearty food is probably due to the diminished quantity of water in the system and the consequent scanty secretion of the glands connected with the alimentary tract which is entirely insufficient for the digestion of such food. Furthermore, we must remember that although in a condition of health by the time the food has reached the lower portion of the small intestines it has become so far digested as to be entirely fluid, yet, in the condition of disease in consequence of the imperfect digestion, and in consequence of the more rapid peristalsis which manifests itself in the diarrhoea, the food may not be perfectly digested and may reach the lower bowel in a more or less solid condition, and thus irritate the inflamed Peyer's patches. For the same reason food containing indigestible seeds or irritating insoluble substances, such as pepper, which might find a lodgment and cause irritation of the ulcerated Peyer's patches are to be avoided.

The aversion to sugar and sweets which typhoid fever patients betray is so strong that they often will refuse to take ice-cream or custard, which they otherwise would very much enjoy, simply because they are too sweet, and they desire to have all such food made with little or no sugar. This aversion to sugar is, perhaps, due in part to the amount of water which such substances require for their solution, and in part to the fact that these substances are apt to produce a flatulent dyspepsia which is especially bad in typhoid fever where the tympanites is always a more or less distressing symptom. It seems to me, then, that besides the aversion of the patient and the difficulty

which we would have in administering such food that we have good and sufficient reasons for following the patients' taste in this matter also, and to exclude from the diet of typhoid fever meats, vegetables, and food containing much sugar.

*Third.* In typhoid fever although the patients have lost all appetite for hearty food and for sweets yet they often show a decided appetite for liquid foods especially for milk and for some form of soup or extract made from meat. Many patients in the early stage of typhoid fever enjoy drinking milk very much indeed, and find a glass of cold milk delicious even though in health they do not like this article of diet, and many persons take no other food than milk during the whole course of their fever. In case the milk is vomited in curds it may be necessary to add lime water to it or to peptonize it if the addition of lime water is not sufficient. When even peptonized milk is rejected by the stomach then some preparation of infant's food, such as Mellin's food or Imperial Granum made with milk is often very well borne indeed, or Kumyss or Matzoon may be tried; although the large amount of carbonic acid gas contained in these preparations of milk make them of doubtful value in typhoid fever on account of the tympanites. Even when milk is well borne it is often desirable for the sake of variety and to preserve the appetite of the patient to add other articles to it, the addition of an egg beaten up in the milk is a very nutritious, and where the stomach is strong enough to bear it, a very desirable thing. Custard of various kinds, especially rennet custard, ice cream made with a simple fruit flavor, and ordinary tea with much milk are often very grateful to these patients and very nourishing.

Although many cases can thus be nourished throughout the entire fever with milk and some modification of milk, yet the addition of soups or meat extracts is often very desirable. The beef extracts do not contain, perhaps, a great deal of nourishment, but they act as stimulants and are often so eagerly desired by patients with fever that their use seems to be essential. These extracts of beef should be made with only a small amount of water and at a low temperature so as not to coagulate the albumen and thus impair what little nutritive value the extract possesses. Even better than these extracts is often scraped beef, or the juice pressed from scraped beef, and this scraped beef can often be spread on thin slices of stale bread with advantage. Well boiled rice either alone or added to the beef extract is also of great value. The liquid part of oyster or clam soups made with milk, and even the soft part of raw oysters without pepper, and soft boiled eggs may form part of a diet of typhoid fever in many cases.

Liquid or semi-liquid food composed of milk, eggs, and the juice of meat, must form the diet in typhoid fever, and such a diet corresponds to the taste of the majority of the patients with typhoid fever, and must be modified in each case to correspond to the taste of the individual patient unless the thing that he desires is manifestly injurious.

In regard to the part that alcohol should play in the diet of typhoid fever I think that here too we must be guided by the taste of the patient. If he has been for a long time accustomed to the use of alcoholic stimulants, and if such drinks are pleasant to him, then it will be wise to continue the administration of a moderate amount of wine or other alcoholic drinks during the fever. But, if the



patient has not been accustomed to their use, and has no taste for them, then his diet should not include them. Whether or not under certain conditions alcohol should be given in typhoid fever as a medicine does not concern us here.

A very important branch of our subject is that of the diet of convalescence from typhoid fever. But interesting and important as the consideration of this is I must omit it for want of time, and must confine myself strictly to the subject of the dietetic treatment of typhoid fever itself. In the consideration of this subject I have not mentioned a great variety of foods which have been used in typhoid fever, but have sought for the principles which should guide us in our selection of such a diet, and desire to draw attention especially to the importance of consulting the taste and inclination of the patient; a source of knowledge and guide to treatment in all diseases of the greatest value, and one, which, it seems to me, has been too much neglected by physicians in the past very much to the detriment of their patients.

*Antipyretic Treatment, by J. V. Hennessy, M. D.*

Though most of the drugs and modes of treatment that are used in typhoid fever, have been more or less recommended for their power to lower the temperature or prevent its rise, either directly or indirectly, still under the name Antipyretic Treatment, I believe that what is generally understood is the treatment of a hypernormal temperature as a symptom.

There probably is no point in the therapeutics of this disease, upon which such diametrically opposed views are entertained by authors and general practitioners; not only on the question "Which Antipyretic should be used," but also on the more important one "Should any such means be employed." The short time allotted renders it impossible, even if it were desirable to quote authors.

It has been contended on the one side that the dangers of typhoid fever are in direct ratio to the height of the fever, and are to a great extent due to it; and, therefore, that to control the temperature is sure to lower the mortality.

On the other hand it is claimed that the high temperature is not the *cause* of the nervous phenomena, the delirium, etc.; nor of the accidents nor complications which may occur in the course of the disease, and therefore, it is useless to combat it.

Of those who oppose antipyretic treatment, it can be said that their objections are chiefly theoretical; while those who favor it, base their convictions upon clinical experience and on statistics drawn from it.

Of the means for combating a hypernormal treatment, I will speak only of antipyrine, antifebrin, thallin, and the cold bath; believing that quinine, salicylic acid, eucalyptus, and a number of other drugs, have by common consent been dropped, either because of their faint and uncertain action, or on account of unpleasant effects. Antipyrine holds a high place as an antipyretic and is given in doses of from 10 to 30 grs; whenever the temperature is too high, that is when it reaches 104°. The result is usually a fall of from two to three degrees which persists for a variable time (usually 24 hours).

The disadvantage of using antipyrine is that occasionally, distressing symptoms follow its exhibition, such as cyanosis, collapse, etc.

Thallin is used in doses of from 2 to 5 gr. and is believed by many to be as good as if not superior to antipyrine. For antifebrine it is claimed that small doses (3 to 5 grains) repeated when necessary every 2 to 4 hours will certainly reduce the temperature, quiet the restlessness, relieve the severe headache, and generally contribute to the comfort of the patient; and that in these doses there is no danger of cardiac failure or any other unpleasant effect. That these drugs will reduce the temperature is a certainty, and that the general comfort of the patient is added to, seems to be no less true;—but there appears to be a fair amount of agreement among observers that the duration of the disease is in no way shortened, and that there is a greater liability to relapses than after a purely expectant plan of treatment. But it is the cold bath, which, during the last few years, has been most highly praised, and if the statistics based upon the treatment after the method of Brand are to be relied upon, then it is deserving of the closest attention.

These statistics show a mortality ranging from 0 to 5 per cent. as compared with 7 to 20 per cent. under treatment by the expectant method. It is true that in these figures there may be some element of falsity, as the good results may in part be due to better dietetic management or to other factors of which we do not know, but we will have to take them as they are.

In favor of the method, we have to admit, that those who have used it the most believe in it the strongest even going so far as to say that any case if taken early is certain to run a mild course.

It is true that in private practice a large proportion of cases can not possibly be so treated; but where it is possible is it not the best treatment?

According to Brand's method the baths should be given with regularity, beginning as soon as the patient comes under observation. (If the fever ends within two weeks the diagnosis of typhoid is withdrawn), and no matter whether there are complications or not, such as intestinal hemorrhage, bronchitis or even pneumonia, they should be persisted in, usually with the result of having these unpleasant conditions disappear.

The bath may be given in several ways—the full cold bath, the partial bath, and the warm bath gradually cooled.

The patient is carried to the bath room or the bath tub is brought to the bed side, and the patient is entirely submerged except the head.

The full cold bath, which is given in the majority of cases, should be of a temperature of from 64 to 68. The patient is allowed to remain in this for about 15 minutes or not so long if marked shivering occur. The partial bath with cold affusions is to be preferred when there are chest complications.

In this bath the temperature is about 82; the patient immersed in it and water of a temperature of 50 poured over the head and shoulders, and the patient is briskly rubbed with a sponge or brush. This bath is said to be highly stimulating and may be continued for 5 to 10 minutes.



The warm bath gradually cooled is to be preferred in children, the aged or where there is marked cardiac weakness.

In this bath the water at first is about the temperature of the patient, and is gradually cooled by the addition of ice or cold water, till at the conclusion it is about 68. In this the patient may remain from 20 to 30 minutes. In any case the bath should be discontinued when shivering takes place or when there is marked evidence of weakness. The patient is then put in bed; and friction, hot bottles or stimulants used, as may be indicated.

The number of baths to be given in twenty-four hours varies from 2 to 10 or 12 according to the temperature of the patient and the zeal of the attendant.

Cold sponging as a means of lowering the temperature apparently takes a very low place among antipyretic remedies.

I do not know why this should be so, nor can I say whether extended observations have been made with it as with the cold bath, but it does seem that if the same time or even more were consumed, and water as cold 60 or 62 used that its refrigerant action would at least be nearly as great as when the patient is submerged, as to the application of cold is added the effect of evaporation.

In it we have all the stimulating effects of the bath, without the unpleasant ones, not least of which is the dread (and in children this would amount to positive terror) and the almost unconquerable prejudice of friends. Besides it may be well done without the help of a skilled attendant and in the most inconvenient apartments.

*Value of Alcohol in the Treatment, by S. B. Ward.*

Typhoid fever. To discuss this subject intelligently, we must begin with a few words concerning the action of alcohol upon the human organism, from a physiological standpoint. All liquors, ales, wines and beers contain alcohol in varying proportions and in varying combinations. The distilled liquors exert their influence almost solely through the alcohol which they contain, while the ales, porters and beers contain no inconsiderable quantity of solid matters, some of which are far from being inert. The chemical composition of alcohol,  $C_2H_6O$ , may properly cause it to be classed among the non-nitrogenous substances, which class includes also starches, sugars and fats. Physiological researches seem to have shown that alcohol is eliminated by the lungs, skin and kidneys combined. It appears also that it first circulates in the blood through all the tissues of the body, and that when taken in quantities sufficient to produce intoxication, a considerable percentage of it disappears by some transformation in the body and is not thrown off as alcohol. Taken in moderate quantities it produces, in some persons, a certain degree of nervous exaltation and sharpens the mental faculties, while in others the latter become blunted almost at once, and this latter condition occurs always if a sufficient quantity is taken.

The phenomena attendant upon large doses, frequently repeated, are known to you all. Death may even follow the delirium potatorum. That with many persons alcohol gives temporary tone and vigor, can scarcely be doubted; still, the depression following in most persons, more than offsets the temporary advantage. By its use in moderate quan-

tity, continued for a number of days, the exhalation of  $\text{CO}_2$  and also the discharge of urea and excrementitious matters, are notably diminished. When the organism can be adequately supplied with food, and the food properly digested and assimilated, alcohol may be said to be always injurious; but when in almost any form of illness, food cannot be taken, or cannot be digested, or cannot be assimilated, then alcohol may temporarily replace the food and restore the powers of the body, but the effect of its long continued use, especially with insufficient nourishment, shows that it is not possible for it to long take the place of other and assimilable matters.

While alcohol taken in considerable quantities produces a sensation of warmth, yet the experience of all travelers in the Arctic regions shows that the men exposed to excessive cold did better without alcohol than with it. Some accidental great over-exposure may necessitate its temporary use, but in any other way it is positively injurious on account of the great depression and reaction that follow it. Hot coffee is found to be infinitely more valuable for the purpose stated. Alcohol acts as a narcotic on the sympathetic nervous system, while tea and coffee excite the cerebro-spinal axis. The former stupifies, while the latter brightens the intellect; the former inebriates, the latter cheers and preserves.

When alcohol is given therapeutically, its immediate action is upon the sympathetic nervous system, where it exercises a sedative influence upon the vaso-inhibitory nerves, increasing the frequency of the heart-beat and also its force. It necessarily follows that the capillaries are dilated, diffusing temporary warmth throughout the system, at the same time increasing the blood supply to the nerve centres; and, if taken in excess, exerting its physiological influence upon the brain. Probably when it is decided that alcohol should be administered at all, there is no safer practical rule than that is doing good in any quantity, no matter how great, which produces no effect on the intellectual part of the man, and that it is given in excess just as soon as it does.

While alcohol produces a sensation of warmth, the fact is that its exhibition in moderate doses produces a moderate diminution, and in larger doses a considerable reduction of the bodily temperature, the diminution being in proportion to the amount of the alcohol ingested. From its chemical composition one might suppose *a priori* that the oxidation of the hydrogen which it contains would augment the temperature of the body. It is, however, an established fact that its influence in checking tissue change and oxidation is so powerful as to more than offset the heat produced by its own oxidation; and from this arises the fact that its administration reduces, instead of raising the temperature of the body.

It is quite possible that this action is also enhanced by its capacity to dilate the capillaries in the skin, thereby increasing the radiation of heat from the surface. It is also aided by the additional activity which it causes in the sweat glands and the subsequent rapid evaporation of perspiration. In toxic doses, the temperature has been known to fall from two to four degrees Fahrenheit, as a consequence of the influence of this drug.

Therapeutically considered, one of the most important properties of alcohol is the action it has in calming bodily restlessness, in produc-



ing sleep and in quieting delirium. Another valuable action is its capacity to increase the force of the heart beat. Nothnagel explains this by stating that it is a direct stimulant to the vagus nerve, through the pneumogastric centre in the brain, and that it probably also acts directly on the heart plexus.

With reference to its use in typhoid fever, we may start out with the fundamental proposition that its administration should form no essential part of the treatment of this disease ; it should be prescribed only as any other drug, or remedial agent is, for well defined reasons. Certainly alcohol should not be administered at the outset of any case, unless the patient be one of the class known as "steady drinkers," and show, as some of them will, within the first few days, the bad effects of suddenly stopping the stimulant.

If the patient be greatly reduced in strength and especially anæmic, he may need alcohol earlier than a strong, plethoric patient ; but it is best, under any circumstances, to reserve this powerful agent for possible complications that may come later, and especially for heart failure.

Indications for its use are:

First—Feeble or imperceptible radial pulse with corresponding weakness of the first sound of the heart on auscultation. It is possible that even then some other drug, such as digitalis or strophanthus, may answer a better purpose than alcohol, or, at any rate, may prove an indispensable adjuvant.

Second—The condition of the intestinal tract, principally gangrene and sloughing, with resulting depression. To administer alcohol during the first week of typhoid fever, with a view of preventing heart failure or depression, it is worse than useless.

It is impossible to lay down any definite rule as to the amount of alcohol to be administered. The character of the heart systole and the symptoms on the part of the nervous system are the best guides. If these are improved under its administration, its use is doing good ; if not, it is doing harm.

It is equally impossible to lay down any exact rule as to the amount to be given, save that as you are giving it for some purpose, it is proper to endeavor to accomplish that purpose.

As I said before, I believe that when any symptoms of intoxication are being produced, your stimulant is doing more harm than good. If, on the other hand, the pulse is increased in strength and the heart-sounds are improved in quality, we should not care whether half a pint or a pint a day is being administered. I have seen one excellent practitioner order a teaspoonful of whisky to be administered every three or four hours ; and I have known a weak, feeble woman, who had never before used stimulants in her life, take a quart of brandy, a pint of sherry and a bottle of champagne every twenty-four hours, with the effect, as appeared, and as I believed, of saving her life. As a rule, whisky and brandy are better borne than any other form of stimulant. Some few patients, however, will take champagne with better effect, and I know of no objection to it unless the collection of gas in the intestines be hereby increased. Some authors recommend always giving the spirits diluted with water. It is my custom to give it in the shape of milk punch, as the mode has seemed to me to afford better

results. During the height of the fever, whisky and brandy have seemed to me to answer a better purpose than the light wines; but during convalescence, the latter give the best results, and especially if taken with meals. In no case should the amount to be administered be left to the discretion of friends or the family. It should be definitely and specifically prescribed and the effect carefully watched.

In conclusion, I must acknowledge my indebtedness for the arrangement of the physiological part of this paper to the lecture of my friend Professor Townsend on this subject, and for material aid in looking up the literature, to my friend Dr. Brennan.

*Medicinal Treatment, by T. K. Perry, M. D.*

That the medical treatment of typhoid fever has been considered of inestimable value is abundantly evidenced, not only by the mass of testimony relative to the subject, but the character and world wide reputation of the observers whose contributions we have regarded as authoritative, and for the time, convincing. When such renowned clinicians as Leibermeister, Zeimsson, Niemeyer, Winderlich, Trosseau, Chomel, Murchinson, Jenner, Johnson, Parks, Flint, Loomis and Bartholow, assure their less astute brethren that certain medicinal agents are not only necessary, but of paramount importance in the treatment of this disease, it would seem extreme professional heresy, and almost suicidal to recede from their position.

That a most decided revolution has been, and is, taking place concerning this very matter of medicine in typhoid fever, no one who reads at all carefully or comprehensively, can for a minute doubt. Nor is this strange when one considers that the very eminent observers above quoted arrived at their conclusion, and pinned their faith, in medicinal agents of greatly varying strength and kind. One treated with nitro-mur, another with sulphurous, another with acetic and yet another with carbolic acid. Others again extolled the use of various preparations of ammonia, sulpho carbolates and even po. borax. Yet others again were of the mercurial school and believed calomel almost a specific. Others used iodine, or iodine alternating with either mercury or carbolic acid. Others digitatis, veratria vir, or even aconite. Others nitrate of silver, tartar emetic, oil of turpentine, etc., etc. Then came the craze for cinchona and its various preparations and finally alkaloids, and lastly the indiscriminate use of every so-called antipyretic no matter from what source obtained. The modern practitioner, confronted by this mass of conflicting, confusing and almost amusing testimony, with his more conservative ideas, more nearly perfected methods of research and a much better knowledge of the natural history and pathology of this disease, and believing it self-limited and tending under ordinary circumstances toward recovery, almost marvels that any recovered under some of the older methods, and is himself chary of all medicines, so far as their specific effect or abortive influence is concerned, and possibly flies to the other extreme. But, however, this may be, we are doubtless not all agreed on this point, and presumably many of our ablest and best, feel a greater sense of security when they know that some one or more therapeutic agents are being given their patients at stated intervals.

For the purpose then of fulfilling my share toward precipitating



the subsequent discussion of this subject, permit me to direct your attention to the medicines which I believe are more generally used. First, we will have reference to the regular uncomplicated form and will group the agents according to their supposed efficacy into abortives, specifics, antipyretics and tonics. So noted an observer as Ziemssen believed it possible to abort or cut short the disease by the early and prompt administration of a seidlitz powder followed by full doses of iodide of potassium. The same author lays great stress on the early use of tr. iodine and calomel given alternately. Dr. Siveday of France believes the early use of pulv. ipec. gr. 20, with tart. emetic gr. ss., to be an abortive agent of great efficacy. Among our countrymen I do not find that abortive remedies have been given much credence. Under the head of specific agents may be mentioned sulphurous acid x to xx drops t. i. d., and continued for no longer than two weeks; carbolic acid gtts. i to ii, three or four times a day; tr. iodine gtts. iii to v in milk, t. i. d., or tr. iodine and acid carbol. given together. Calomel in doses of 1-20 to 1-10 gr. every three hours. Ol. terebinth in v to xv drop doses three or four times a day. These medicines have the endorsement of high authority. The third group or antipyretics, are by far the most important as well as most numerous, they are; the various alkaloids of cinchona, calisaya, phenactin, salicin, naphthalin, antipyrine, antifebrin, iod-antipyrine and iod-antifebrin. Of this class, their dose, action and effect, a later speaker will inform you. As to tonics, particularly these applicable to an overwrought and much weakened heart muscle, may be mentioned tr. digitalis, tr. strophanthus, tr. adonis venalis, tr. muschus, tr. cactus grandifloria, tr. nucis vomica, or preparations of strychnia. The dose of any of these must be small and repeated not too often for fear of cumulative action.

The complications of typhoid fever which confront us most often and which really do require, it seems to me some medication are 1st, hemorrhage from bowels; 2nd, delirium and coma vigil; 3d, excessive cough; 4th, peritonitis from contiguity. Hemorrhage may be treated with ex. ergott dr. ss. to dr. one every three or four hours, ergotin gr. i to iii, by mouth or hypodermatically three or four times a day. Ol. terebinth, gtt. x to xv in milk or other vehicle every three or four hours. Plumbic acet., gr. ii to v. Cupric sulph gr. 1-4 to 2-3. Argentic nit. gr. 1-10 to 1-4. Gallic or tannic acids gr. v to xv or tr. ferric chlor. gtts. x to xx, to be given P. R. N. I shall myself strongly recommend the tr. iron. Delirium may be aided by chloral, bromide of potassa, tr. valerian and musk, tr. hyoscyamus, tr. digitalis and morphia. Coma vigil by morphia, chloral or sulphonal. Cough is greatly helped or lessened by simple expectorants containing small quantities of chloroform, ether or Hoffman's anodyne, or by the use of the spray charged with a little morphia, belladonna or cocaine. Peritonitis from perforation seems almost hopeless from the start out, is best treated by opium in some form when it arises from deep ulceration without actual perforation. Opium or morphine in large doses would seem to me the only therapeutic resource.

It would seem then, from the foregoing, that while the complications of typhoid fever are not only amendable in great measures, but actually demand therapeutic interference, the disease itself is more satisfactorily treated, and best conducted to a safe and speedy termi-



nation by measures other than medicinal. At all events such is my individual opinion based on a very fair experience with this disease, both in private and hospital practice.

*General Discussion by the Members.*

DR. TOWNSEND: There are a few points, which I regret Dr. Hun did not have the time to more fully discuss, one of which is as to the proper diet during the first period of convalescence. We have understood during the *course of the fever* that the fluid diet, as described by Dr. Hun is by far the best and only proper diet. Now comes the important question as to the beginning of the convalescence, what diet is best at this time? In the early beginning of giving *solid* food, with the result in all probability, or tendency at all events toward the result, of bringing about a condition known as relapse. Properly would this bring to mind a question, therefore, with reference to this subject of relapse, as to whether it be due to the change in diet, or whether it be due to a renewal of infection in certain other of the agnate glands in the vicinity of those already affected. I know in some essays, written by Dr. A. Jacobi on the subject of typhoid fever, especially in regard to the dietetic treatment of its convalescence, that he seems to feel that the relapses are frequently occasioned by the administration of what Dr. Hun terms, and as we well know, "heartly food" too early after this period has begun. I should like to know from Dr. Hun, therefore, in this discussion, as to what would be the best manner of conducting a case during its early convalescence, with reference to the diet. Now, with regard to the discussion of Dr. Hennessey in connection with the subject of antipyretic treatment. It would seem from my experience in numerous cases of typhoid fever that I have seen, that the use of antipyrine in a dose of thirty grains, would be *considerable* of a dose. The doctor limits it, from ten to thirty grains. Antipyrine in thirty grain doses has, in my present experience, never been given, but in even smaller doses, fifteen grains say it has produced symptoms which I should think might possibly become alarming in some instances. With reference to the subject as to the use of antipyrine, as an antipyretic, without any question to my mind, the reduction of temperature by the use of this drug in a number of observed cases, as compared with the use of of antifebrine was, that antipyrine was the more effective. Dr. Ward saw a case with me, where we both observed that antipyrine would hold the temperature down longer than antifebrine. It has done so in almost every case I have tried it in, and I have tried it on quite a number. Another fact in reference to antipyrine is, that I have never seen it hold the temperature down so long as a maximum of twenty-four hours, as suggested by Dr. Hennessey. There is another treatment in this discussion, made by Dr. Perry, which might be of service to some, and that is the administration of calomel in fractional grain doses, and in which, if there be such a thing as the aborting of typhoid fever, which I disbelieve in, it may have possibly ameliorated the symptoms only. Mistaken diagnosis sometimes occasion such belief as cutting short this disease. Calomel hypodermically has been used in France considerably, and I have used it myself, several times with the effect of apparently ameliorating the symptoms. Whether this statement of mine is so or not, I don't

know ; but as to aborting these cases effectually I am quite sure such is not the case. With regard to the discussion of Dr. Ward on alcohol, I must say with him, that no case of typhoid fever can be judged absolutely as to the use or the indiscriminate use of alcohol. It is certain that what quantity will do for one may not do for another, and it is likewise certain also that those accustomed to drinking, at the time they became seriously ill are deserving of a *greater* portion than those that have not the habit of drink. The most diffusible stimulant mentioned has been, in my experience, brandy. This brings to my mind something more, where in the cases of shock from loss of blood, or even in cases of collapse from perforation of the bowels, that ether will often do more good than it (alcohol), and even better, is a solution of caffein with carbonate of ammonia, which is a quick diffusible stimulant, and which produces definite results within the quickest space of time possible. These all to be used hypodermically. I have likewise with Dr. Ward had the experience of giving within eighteen hours a quart of brandy to patients who are almost in a condition known as articulo mortis, and have seen them revive by such quantities ; and another fact which has proven itself to me, is that the individual, who in a normal condition of affairs could not stand two ounces in the way of liquor, but would become intoxicated, would in a condition of typhoid fever be often capable of taking perhaps four times that amount without showing such a condition.

DR. VAN ALLEN : I will reply to the question of blindness caused by quinine. One of the first cases I think was reported by Dr. Roosa in 1880 or 1881 ; he afterwards in the same number made an additional report in which it seemed to be a matter of doubt as to whether it was caused by quinine. Cases have been reported since, but I think it is regarded rather a result. As to the amount of the dose I do not remember what it was. Where aural results have been found to follow the use of quinine in a great many cases it has been with a comparatively small dose. I remember talking with Dr. Roosa about it and his making the remark he thought about twelve grains of quinine was a pretty large all around dose.

DR. COOK : Most authors in speaking of the use of quinine advocate large doses, twenty to thirty grains once a day, but with me I have for years followed a different course, and it seems to me the beneficial effect is greater by giving quinine in divided doses and producing a depression of the temperature say on an average of one degree. Take a temperature that is 104 1-2 or 105, if you are able to hold it at 103 or 103 1-2 you are putting your patient in safety lines. I was much surprised that Dr. Hennessey did not speak of quinine as being one of the medicines that is most frequently used for that purpose. I have been in the habit of using quinine in five grain doses, first dose ten grains and repeating every four hours in five grain doses, and I have a positive idea that I have succeeded in that way in controlling the temperature, that is, reducing from one and a half to two degrees. I have tried the experiment of dropping quinine for a time and I found the temperature did increase and then going back to quinine found the temperature decreasing. I have used antipyrine somewhat in typhoid, but not very extensively. The first case I ever



tried it in I had the misfortune to lose my patient, and it was an unpleasant occurrence. It seems to me to have a very depressing effect on the heart action. I think quinine sometimes lessens the pulse rate. I have found the pulse rate in the continued use of quinine in five grain doses every three to four hours to become less frequent, and I have had that occurrence a number of times so much so that it seemed to me quinine did it.

PRESIDENT HUN : In regard to Dr. Townsend's question as to the diet in convalescence, as I said in my paper I had not time to take that up and have not time to take it up now. Of course the diet must be increased by the gradual addition of more solid food. I do not think there is very much danger in pushing the solid food when the patient has an appetite for it and seems to be able to digest it ; although it must be given cautiously and in small quantities at first. By the fifth or sixth day after the fever had ceased, the patient can begin to take solid food. In regard to the danger of relapse I do not think a relapse is ever caused by errors in diet. I have seen so many cases where through an error of diet there has been a rise in temperature which lasted forty-eight hours and then fell again, and seen so many cases of relapse occurring where diet has been absolutely fluid that I am inclined to think that the relapse is due to the fact that the typhoid germ is in the system and has not been removed, as relapses so frequently follow those forms of fever where antipyretic treatment has been used. I think there is very little danger of relapses from too much food. As regards the antipyrene treatment, I would like to say a few words in regard to the sponge bath which Dr. Hennessey speaks of as likely to reduce the temperature. In the City hospital in Boston I used sponge baths with cold water for a long time, and I never found the temperature diminished after such a bath more than half a degree in any case. In that same hospital I was ordered to give cold baths to two patients. We gave them systematically, we had the bath close to the bed and both patients died. I have also seen very bad results in cases in consultation in this city where antipryin has been used when without other apparent cause the patients have gone into a condition of collapse, the heart has become feeble and the patients have died. I may be very strongly prejudiced, but I have a strong feeling against the use of antipyretics except in exceptional cases, and then only temporarily. As regards Dr. Curtis's remarks about digitalis and alcohol I cannot agree with him. I think it is most important to stimulate the heart and I think digitalis is a very valuable drug to be given in typhoid fever where the heart is weak, but digitalis is a very slow acting drug. In experimenting in St. Peter's hospital with digitalis, we could not get any effect in much less than thirty-six hours. It is when the collapse has come before we can get digitalis to act that I think brandy or whiskey or ether (sometimes sub-entaneously) is of the greatest importance. After you have got the heart toned up for twenty-four or thirty-six hours the digitalis will begin to act.

DR. PERRY : It has fallen to my lot to outline a portion of this evening's discussion that was not the most satisfactory from the fact that medicinally, the treatment of typhoid fever has fallen, apparently



into innocuous desuetude. Even the younger practitioners present have seen very considerable changes in the therapeutics of this disease, while to the elder these changes must seem almost wonderful, from the giving of enormous doses of quinine, calomel and turpentine, to say nothing of numerous other drugs, to the discontinuing of medicine almost entirely; and still with a resulting lower rate of mortality. I use little or no medicine while treating this disease, and when I do it is sulph-quinia. I give it in small doses of one to two grains at intervals of every three hours, and continue its use throughout both the fever and convalescence. I do not give it for its abortive, specific, or antipyretic effect, but because I firmly believe it exerts a most favorable tonic influence. Antipyretics of a medicinal character I never use and should consider I had lost my grip if I began, continued, or ended a case of typhoid fever with medicines of this class. The cold bath as an antipyretic measure is undoubtedly of value but is not practicable in private practice. I use the ice bag very often and consider it valuable as an antipyretic; I also regard its use in delirium, either mild or active, as most beneficial. If I use digitalis it is because I think the heart is flagging and needs toning up and stimulating. If I were to resort to anything to aid digitalis or replace it even temporarily it would be whiskey, by all means. I have had my best success in the treatment of typhoid by watching carefully the dietetic and hygienic arrangements using supporting measures from the start, and very little stimulant with little or no medicine. One word in regard to Dr. Van der Veer's discussion of the medicinal treatment of typhoid; he did not refer to it at all, but said that hemorrhage from the bowels was best controlled by an ice bag. To this I heartily agree, but as the use of an ice bag is hardly a medicinal measure the scope of my paper hardly permitted its mention.

DR. HENNESSEY: In referring to Dr. Townsend's statement that he thought thirty grains of antipyrine a large dose I would say that I do, too. I have never used it. I have never used any antipyretic, so in my paper to-night I could not speak from practical experience. In one of the first cases I ever treated I gave a large dose of quinine, twenty grains, and the effect was not pleasant, and I do not think I ever gave that since. As to smaller doses, divided doses, I do not consider it an antipyretic in small doses and so did not treat of it.

DR. CURTIS: To every one who has practiced medicine for fifteen or twenty years there comes down from the early period of his professional existence recollection of the commendations of that father in the profession whose tombstone was to bear the words "He fed fevers." This was a re-action from the earlier time when the opposite course of starvation of fever patients was pursued. I remember that the first case of typhoid fever that I treated received a certain amount of beef tea every four hours and of whiskey in alternation, and the mother of the patient said afterwards that she felt perfectly competent to take care of typhoid fever. Now beef tea is out of fashion and milk is in fashion. In a series of symposiums which appeared in the medical journals two or three years ago on the treatment of typhoid fever, milk was the universally commended article of food. Dr. Hun, in his instructive paper this evening, emphasizes its value, and it is not likely

that any one can suggest a better article for feeding these patients. I do not think that, in one form or another, there is a food equal to it. It is only a question whether the tendency may not be to feed these patients more than their weakened digestive organs can take care of.

As to the use of antipyretics, my experience does not tally with the conclusions arrived at in Dr. Hennessey's paper. I believe that quinine is the best antipyretic. Antipyrine, and its related drugs of varied nomenclature, is more transient in effect and less safe to give. My experience coincides with that of Liebermeister in favor of giving the entire amount for the day between nine and ten o'clock at night, and in doses of fifteen or twenty grains; this produces a remission of temperature usually felt for forty-eight hours, a certain and prolonged effect which I think can never be looked for from antipyrine. The depressing effect upon the heart of this latter remedy should never be lost sight of a disease in which is always attended with weakening of heart muscles, and I should be loth ever to use it in large doses in typhoid fever.

In regard to the use of alcohol, I think no one would think of giving it regularly from the commencement now. What is its indication? To counteract depression and heart failure. For the latter the pulse should guide, but otherwise the tongue furnishes the best indication of the condition calling for it. I should say give no alcohol until the tongue becomes dry and brown and sordes collect upon it and the teeth—the typhoid state has come. Then I would give it at intervals of not less than four hours, and in doses sufficiently large to produce the impulse of stimulation which is then called for—a half ounce or two or three times that as may be necessary. I would not allow it to be given until the clear indication for it arose, and then I would not have it given in dribblets but in massive doses, just as with quinine. Its great value as a stimulant is weakened when stimulation is greatly needed if the system has become in any degree inured to it by earlier exhibition. In impending heart weakening it also has its value, and for the weak heart of the third week of typhoid fever it is the best remedy, better than digitalis, which I have never seen to produce any effect on these degenerated heart muscles. But if heart weakening, or heart failure has actually occurred, I have not seen either have a sensible effect.

DR. MAURICE J. LEWIS: The Lord has been particularly good to such patients as chanced to have typhoid fever and came under my care, and in aiding in the work of recovery I have adopted a line of treatment that may be of interest, and while I do not attribute the success which I have had to the treatment, it may not be out of place to mention one or two features of the same essentially different from what has been already dwelt upon by others. I have learned from experience that men who are inclined to drink are very poor subjects upon whom to administer alcohol in acute diseases like pneumonia or typhoid fever, with a view to obtaining a stimulating effect. My plan of treatment has always been to place a tablespoonful of an alcoholic, more particularly whiskey or brandy, prefferably brandy, in a goblet of water and giving in doses of a tablespoonful of the mixture hourly. That may seem a small dose, but in cases of persons addicted to alcohols it has had the desired effect; it acts as a stimulant to poe-



ple who are in the habit of taking brandy or whiskey by the glassful when well. I remember very particularly a case which through accident, came under my care, where the good effect of alcohols administered hypodermatically proved itself. I was going down town and a physican asked me to step in to see a patient of his who was ill with typhoid fever. I went in and found him apparently dying. He had already developed what is commonly termed the "death rattle." I chanced to have a hypodermic syringe, and charging it, injected some whiskey under the skin. The patient recovered sufficiently to ask for something to drink, and lived twenty-four hours longer. Whether if this plan of treatment had been continued it would have had the desired effect of restoring him to health, of course is a question that will arise and, being purely theoretical, admits of argument. I agree with Dr. Curtis as to the value of quinine as a tonic, but I do not believe it should be given in such large doses. It is my practice in the early stages of the disease to give two grains of quinine every four hours, and if the patient grows worse as indicated by the thermometer, I do not increase the dose, but I give the quinine in smaller doses more frequently. I use the sponge bath. I tried on two occasions in private practice to use the German immersion method of treatment, and in each instance I was fortunate in escaping with my life. Subsequent to these experiences I advised the use of sponge baths, applying water which is of the temperature of the body and gradually cooling it. The sponging is continued for from five to ten minutes and repeated every half hour until the temperature of the water has been brought down to 70 F. Lower than that I never go. The results have been good.

DR. VANDERVEER: Dr. Ball in his remarks in reference to indication in typhoid fever referred to perforations and abdominal section. I must say that I know of no position so distressing to be placed in as to be called in a case where perforation has taken place under the belief that something can be done by abdominal section and closing the openings that have been made by the perforations. I remember a case some two years ago that occurred in Schenectady. A young man evidently of strong will, who was then in a condition of collapse, cold hands, with no radial pulse, but whose brain was acting remarkably well and who begged for an operation, but it seemed so thoroughly hopeless, that I delayed and really he lived only a few hours afterwards, but his brain continued to act almost up to the time of his death. I have seen cases recover from perforation where nature seemed to throw about sufficient adhesions at the time so that the patient could rally from the condition of collapse and finally recovered. I know of two cases that I have in mind where the condition seemed hopeless and yet they rallied and recovered. My own opinion is the operation is not justifiable. I listened with a good deal of attention to Dr. Hun's remarks. I think the diet in typhoid fever is a very important element. I look back to our cases treated in the army, that recovered almost entirely with the use of condensed milk, and such beef tea as could be prepared by the incompetent nurses which we often had, but they did recover to a greater degree than they do in private practice. I think statistics will sustain that fact,



although of course, we had there the element of fresh air being treated in tents, which was a good thing. When we think of giving our patients what they seem to want in typhoid fever, and as I look back during my professional life and think of the cases that were treated twenty-five years ago, when no patient was allowed to take water for his thirst, the juice of the orange was forbidden them, and the taking of milk cold was looked upon as an error, and then think of what Dr. Hun suggested to-night, I feel a good deal as the old lady did who went to hear Ingersoll one afternoon. She was pretty well grounded in her faith, and the next afternoon she went to hear Jenness Miller, on dress reform. She stood the last lecture as long as she could and turning around and throwing up her hands, said: "Girls, no Lord, no chemise! What are we coming to?" It is true I believe that a close attention to diet, is a move in the right direction. We should be taught more on the question of diet. Give them all the water they wish; frozen milk is a great comfort to them. One word in regard to Dr. Perry's medicinal treatment. I emphasize, and with a great deal of earnestness, that in cases of hemorrhage place the patient in an absolutely horizontal position. Not elevating the hips or shoulders but keeping him absolutely level in his bed, and then place ice bags, not too heavy, upon the abdomen, and it is astonishing the weight they will bear and the comfort they will get from them. I believe it arrests the peristaltic motion of the bowels, and I have seen most excellent effects from their application. As to the use of antipyretics I must say that I am woefully in doubt as to how much good comes from reducing the temperature. The internal administration of antipyrine I look upon as a very dangerous line of treatment: I believe the large dose of quinine is safer. I think sometimes in reducing the temperature you may be doing as much harm as you are doing good. I do not know of any man, who in his practice, has studied with more care and in consultation speaks with greater clearness upon the different forms of stimulants to be administered than Dr. Ward, and yet there is a point upon which he touched with regard to the use of whiskey and brandy that I would like to know more about. I know in the army we made use of it and with very excellent effect, but there is one condition, and that is the administration of alcohol in any form, just about the time that the delirium begins with earnestness. We have carried them along to this point, but they now present this condition and we give alcohol and sometimes it has a happy effect. The patient goes to sleep under a good, stiff milk punch, and in other cases it seems to have the opposite effect. That has always been an embarrassing condition to me. Here is another little point in which I do not agree with Dr. Ward. I have found when you give the milk punch, after a while they tire of milk and you lose the effect of that line of diet, and I give whiskey with water and brandy with water, and when this condition of delirium is not relieved by either alcohol or brandy, I then give them champagne, and I have seen some cases where the champagne had a very happy effect in relieving that excessive delirious condition. I would like to ask Dr. Van Allen if there is such a thing as quinine blindness from the administration of large doses of quinine, and if there is any limit to the dose in producing this condition. Dr. Lewi speaks about the

hypodermic injection of whiskey ; most assuredly it is a very proper thing to do in some cases of collapse, but I am reminded a great deal of the rectal administration of alcohol, which has not been dwelt upon here. As long ago as 1862, when the Spinola brigade was being raised in this part of the state, a portion of the regiment was up at the barracks, and we had to take care of the sick, and among the number we had a great many cases of typhoid fever. I remember of one case being treated in an adjoining ward to mine. The doctor in charge was very much alarmed and said, "I think my patient is about to die, and I am going to try a rectal injection of whiskey." He ordered an injection of whiskey and hot water and about as the nurse was to give it he came to the door and said, "Doctor, the only whiskey we have is that bottle containing the burnt cork." The doctor said, "Give him the burnt cork and all," and he ordered the rectal injection of whiskey in that way administered once in four hours, and that became a noted case. The patient recovered although he was in an unconscious condition. I believe in an apparent hopeless case of typhoid fever never let go a hypodermic or rectal injection ; they may be of service and the case pull through when you least expect it.

---

#### ANNOTATIONS.

*The Medical Society of the State of New York* will hold its next annual meeting at Albany, February 2, 3 and 4, 1892. Dr. Seneca D. Powell, No. 12 West Fortieth street, New York, Dr. James D. Spencer, of Watertown, and Dr. Franklin Townsend, No. 2 Park Place, Albany, have been appointed the Business Committee. Any communications regarding papers or any matter pertaining to the business of the society which should properly come before the Business Committee should be addressed to Dr. Seneca D. Powell, 12 West Fortieth street, New York city.

*The "Keeley Cure" Again.*—"The so-called bi-chloride of gold treatment of inebriety, for which so much has been claimed, and to which the newspaper press has given such prominence, proves to be a rank humbug. Bi-chloride of gold, though a medical possibility is impossible therapeutically, as the preparation reduces and becomes inert the moment the chemical bi-chloride transformation is effected.

"It is stated that the remedies employed by the manager or the institution which has been chiefly identified with this treatment, at Dwight, Illinois, are the hypodermic use of cocaine and administration by mouth of the so-called bi-chloride of gold, which a recent analysis reveals to be a weak solution of aloin in water combined with comp. tr. chinchona. The only gold used in the treatment is that supplied by the dupes in the form of fees.

"The favorable effects of this treatment are in part due to the action of cocaine, but chiefly to the mental effect on the patients, who emotionally stimulated by faith in the promised cure, are enabled to gain temporary control of their habit. The lay and religious press have given the chief quack and his humbug an amount of free advertising beyond computation.

"The secretary of the State Board of Health of Illinois is authority for the statement that the manager of this institution at Dwight was refused a license to practice medicine in Illinois."



# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—No. 1. JANUARY, 1892. \$1.00 A YEAR.

---

WITH the New Year, in a new dress, with an altered face, and with a third more of reading matter, the "Annals" greets you; and hopes that despite the change in outward appearance you will recognize the old friend who, during twelve years of a rather anxious existence, has striven to promote the best interests of the medical profession in that section of the county of which Albany is the centre. This change in dress is but the outward sign of a very radical change in its entire being, for with this number a new editor and a new publisher commence their attempt to carry forward the good work of their predecessors to a more glorious future. But notwithstanding this great transformation in the entire structure of the "Annals" the aim and object of its existence remain unchanged, and it will devote itself especially to scattering broadcast the seed sown in those two excellent nurseries of medical knowledge in Albany, the "County Medical Society" which is a focus toward which all the medical knowledge and fraternal feeling in the county should centre, and the "Medical College," which through its alumni extends its influence over a larger and an ever extending circle.

Under a new and vigorous administration the County Society has sprung this winter into unwonted activity and is not only doing excellent medical work, but is, we trust, bringing about a more fraternal feeling among the members, and drawing the physicians of the county together into a most durable unity. It will be a great pleasure to the editor to contribute to this result by publishing in the "Annals" the excellent papers and valuable discussions of topics of universal medical interest presented to the society and thus extend their influence beyond the narrow limit of each individual meeting in "Alumni Hall."

In the great advance in medical education which has



taken place in this state during the past few years, the Albany Medical College has been in the van, and has been desirous of having higher and stronger safeguards placed about the entrance to the medical profession. Never before in its history has the college had as many students, and never before have the quality and quantity of instruction given in it been as excellent as at present. The "Annals" hopes to publish some of the clinical lectures delivered in the college, and will be grateful to any alumnus of the college, who will send either an article on any medical subject or any item of news that will be of general interest. Although the "Annals" must draw most of its material from the county society, and from the teachers and alumni of the college, it does not, by any means, intend to restrict itself to these two sources alone, and is at all times ready and anxious to receive contributions from any of its well wishers.

Finally we appeal to all physicians in the this portion of the state for pecuniary support. Are you not willing to subscribe for the "Annals" for a year and thus aid in maintaining a medical journal which will give you information in regard to your immediate neighbors and will be devoted to your interest?

---

## REVIEWS AND BOOK NOTICES.

---

LESSONS IN THE DIAGNOSIS AND TREATMENT OF EYE DISEASES. By Casey A. Wood, M. D. The Physicians' Leisure Library. Geo. R. Davis, Publisher, Detroit, Mich., 1891. 25 cents.

The various series of "The Physicians' Leisure Library, have contained a number of valuable contributions upon medical and surgical subjects, which are offered at a very small price, considering their character, size and typographical excellence. Scattered through the series are several volumes upon ophthalmological subjects: "Determination of the Necessity of Wearing Glasses," by Dr. Roosa; "Granular Lids and Contagious Ophthalmia," by Dr. Mittendorf, and "The Theory and practice of the Ophthalmoscope," by Dr. Claiborne.

The present volume is intended to complete the subject of ophthalmology. It is far more difficult to write a brief manual than to write a text-book, and Dr. Wood has not succeeded in overcoming the difficulty. The spaces assigned to the various subjects are not well balanced. Important diseases are dismissed with a paragraph, while pages are occupied with directions for performing operations that are not in the scope of such a brief volume; and directions, in some instances, so meagre and inaccurate as to be of little value. Dr. Wood should have exercised more care, for he is evidently capable of writing a much better hand-book.

V. A.

A. B. C. OF THE SWEDISH SYSTEM OF EDUCATIONAL GYMNASTICS. A Practical Hand-book for School Teachers and the Home, by Hartvig Nizzen, with 77 illustrations. F. A. Davis, Publisher, Philadelphia, Pa. 75 cents.

This little treatise deals with the subject from a practical standpoint entirely. It does not discuss the history nor theory of educational gymnastic; but after asking and answering questions, such as one would be likely to inquire in studying this system, it plunges directly into the necessary positions and day-orders. These are also elucidated for the most part by the system of questioning and explanations. The various positions are fully illustrated by simple figures, and the directions are clear, crisp and concise. As its title indicates it is elementary, and intended as a simple hand-book for teachers in primary schools where simple gymnastic exercises are compulsory, and teaches such things only, as can be comprehended and applied by school children of both sexes, without the use of apparatus. H. V. R.

---

The editor acknowledges with thanks the receipts of the following books and monographs: The Physician's Hand-Book for 1882, by Albert D. Elmer, M. D.; Syringomyelia and Allied Diseases, by Walter Vought, M. D.; Sanitary Condition of the Water Supply of Lowell, Mass., Nov.-Dec., 1880, by William T. Sedgwick; The Application of Sacred Resection to Gynecological Work, by E. E. Montgomery, M. D., Philadelphia; Notes of Some Cases of Drinking Water and Disease, by William P. Mason.

---

### PERSONALS.

Dr. Charles D. Rodgers, '88, formerly of Round Lake, is now located at Sitka, Alaska, having a government appointment and meeting with good success in his hospital work there. He has kindly sent to the Annals a report of the governor of Alaska for the fiscal year of 1891, which contains a great deal of interesting reading.

Dr. Robert F. McFarlane, '88, has moved to Long Island City, where he is now located in practice. He has the good wishes of his professional friends who have enjoyed much his association.

Dr. Fred A. Williams, graduate of '91, has located at Cocoa, Indian River, Fla. He writes of having passed successfully the examination before the State Board of Examiners, and has been granted his certificate to practice. Says the climate at Coco is delightful, although there are some days in which the moisture of the atmosphere is quite marked. He is located on the Indian River where the famous sweet oranges are raised. "Cocoa is twenty miles below Titusville on the Indian River, and just above Rockledge, on the East coast. The Indian River is nothing but an immense lagoon and the water is quite blackish; it makes a splendid yachting grounds, and forms at present our only means of transportation, although a railroad from Titusville to Rockledge is strongly talked of.



# THE Albany Medical Annals

---

VOL. XIII.

FEBRUARY, 1892.

No. 2.

---

## \*DEVIATIONS OF THE NASAL SEPTUM.

BY ARTHUR G. ROOT, M. D., ALBANY, N. Y.

Fellow of the Medical Society of London, Member British Laryuzological and Rhynological Association.

UNDER this head I should like to include not only what perhaps would be understood by the word deviations, but also partial thickenings of the nasal septum, spurs and out-growths. Leaving out much that might be said in relation to the history of this subject, suffice it to say, that since the eighteenth century the works bearing particularly upon it have considerably increased. We have at our command now, works by Hubert, Krieg, Gleitsmann, Bosworth, Delavan, George Stoker, Jarvis, Stan, Rosenthal, Walsham and numerous other writers.

*Patheological Anatomy.* It has been asserted by one of the most prominent rhinologists of the world, Scheck, that in his opinion there scarcely exists a single individual with a perfectly straight nasal septum. This assertion is corroborated by Voltonei, based upon his observations made as long ago as 1861. From careful observation, it would seem that we also must agree with the aforesaid gentleman. Therefore, deviations of the nasal septum may be said to belong to the most common order of phenomonæ. The statistics of different authors regarding the frequency of this disorder may prove of some interest, from the fact that they show numerous differences. Zucker Kandl, in 1882, found deviations of the septum in 37.8 per cent, based upon 370 cases. Allen found deviations in 68.9 per cent, fifty-eight cases. Bryson Delavan, 50 per cent. Jarvis, in 1888, found deviations in 81 per cent of 100 cases. Loewenberg found deviations in 86 per cent,

---

\*Read before the Albany County Medical Society, December 30, 1891.



while Sir Morrell Mackenzie, in 1884, found deviations in 76.9 per cent, based upon an observation of 2,152 cases. It is also a matter of considerable interest to compare the percentage of deviations of the septum as occurring in the different races. Zucker Kandl has shown us that, generally among Europeans it is particularly prevalent. Sir Morrell Mackenzie found out of 438 cases of symmetrical nasal septa, only 22.6 per cent occurred in Europeans, while the rest, 77.4 per cent were found among the inhabitants of America, Africa and Polynesia. If one may determine upon any particular age at which this phenomenon is more common than at another, it would seem to occupy the years between fifteen and twenty-five. This affection is extremely rare below the age of four or five years. It is also found to be more prevalent in the male sex. Most of the leading authors agree that deviations of the nasal septum are confined to the anterior two-thirds of this structure, the posterior one-third being constantly in a central position. This is doubtless due to the fact that the posterior third is possessed of much more rigidity than the anterior two-thirds. However markedly deflected the anterior two-thirds of the nasal septum may be, upon making a posterior rhinoscopic examination it will scarcely ever be found that any deviation is visible at that point. Various rhinologists have attempted to make a classification of deviations of the nasal septum, and possibly I cannot do better than to refer for a moment to some of these classifications. Jarvis, of New York, divides them into osseous (rare), cartilagenious (most frequent), and osteo-cartilagenious. Loewenberg classifies them according to their situation and direction, as superior, anterior, horizontal and vertical. Rosenthal speaks of six forms: First, small deviations without thickenings; second, deviations with thickenings or spurs; third, sigmoid deviations in vertical or antro-posterior directions; fourth, sigmoid deviations of both kinds with spurs; fifth, crista without defelection of the nasal septum; sixth, zig-zag deviations. Stoker classifies them as follows: Angular deviations, curved deviations (the septum is bent like an arch), sigmoid deviations (in both nasal cavities there is an angular deviation); fourth, the so-called dislocations; fifth, spurs, out-growths, adhesions and exostoses. Hartmann, of Berlin, at the last Inter-National Medical Con-

gress, gave us the most recent classification : First, deviations with or without thickenings of the nasal septum ; second, the so-called leisten or sigmoid, and third, when spurs or processes exist.

The diagnosis of these deviations is made with no difficulty whatsoever by anybody that possesses the slightest knowledge of the use of the nasal speculum. We find all degrees of deviations, varying from that so insignificant that at first sight it may seem that we have no deformity whatever, to those cases in which total occlusion of one nostril is present.

We pass now to the consideration of the sigmoid or irregular forms, and we find that the sigmoid variety occurs comparatively seldom. Morrell Mackenzie observed out of 1657 cases, it was present in 205 only, or 9.5 per cent. In this variety of deflection we find widened and narrowed places in both nasal cavities, the convexity of one side corresponding to the concavity of the other. Beside the sigmoid variety, one meets with a number of cases in which it is almost impossible to class the deflection under any of the previously recognized forms. Consequently, Sir Morrell Mackenzie and Rosenthal have seen fit to give them the name of zig-zag deviations. They occur very rarely ; out of 1657 cases, Mackenzie found but five, or .23 per cent.

As to the second variety, partial thickenings, in the shape of spurs, this variety is comparatively frequent. Out of 2152 cases Mackenzie found them in 673, viz., 31.2 per cent. Zucker Kandl found this variety present in 107 cases out of 370, or 28.9 per cent. Here again as in simply deviations, Europeans seem more inclined to this condition. According to the observations of Zucker Kandl, and to quote Mackenzie again in relation to spurs upon the septum, this author observed this condition most often upon the left side. Out of 673 cases, he found the condition present in 375 cases upon the left side and 231 upon the right side.

Some of the above classifications are, it seems to me, based to some degree upon financial theories. I see no reason why all should not be grouped under three heads, viz. : First, deviations in their proper sense, that is to say, to one side or the other ; second, partial thickenings of the nasal



septum which may exist without deflection, or may or may not have spurs or exostoses, and third, irregular or zig-zag deviations which includes those forms in which we have deflection or deviation in several directions with or without spurs or exostoses.

*Etiology.* The cause of deviations of the nasal septum is many times obscure. A very large majority, however, are undoubtedly due to traumatism. This agency may become active during intra-uterine life, or during parturition. That is to say, some unusual position of the fœtus or by the use of instruments during extraction. During early childhood the traumatic causes are most active, particularly during the earlier attempts at walking, at which time the child experiences many blows, a large proportion of which result in some injury to the nose. If the child be a boy, as he grows older he is particularly exposed to traumatic influences. It has also been affirmed by some authors that deviations of the nasal septum may be caused by sleeping upon one side or by the habit of wiping the nose with one hand. Cases in which a large number of nasal polypi are present in one nostril for a long period of time, we frequently notice a marked deflection toward the opposite side. Hypertrophy of the turbinated bodies exerting pressure, likewise causes deflection to the opposite side. The rarity of a deflection occurring in the posterior part of the septum, is thought by some to be due to the fact, that the posterior part of the turbinated bones have a greater space in which to enlarge. In support of this hypothesis, Baumgarten cites that in cases of atrophic form of nasal catarrh, the septum is comparatively symmetrical. The unequal development of the parts composing the septum is thought by some to be a patent cause of deformity. This theory is held by Walsham, Stewart, Scheck and others, and seems to be exceedingly reasonable, when we remember that the nasal septum is made up of two distinct divisions meeting in the center, with either end a fixed point. The cartilage, (cartilago-quadrangularis), grows in greater and stronger comparison to the bones, (vomer, lamina perpendicularis, ossis ethmoidae). The septum must bend sideways, it being impossible for such bending to take place in an upward or a down-



ward direction. If this inequality in growth and development be still more marked, we have present spines and exostoses, particularly at the junction of the cartilagenious and bony portion. It is thought by George Stoker that cicatrization subsequent to syphilitic or lupoid ulceration, may be a cause of deviation of the nasal septum. I can not leave the question of causation without referring to a theory very recently advanced by Mr. Mayo Collier, of London, in a paper read before the British Laryngological and Rhynological Association, "an organization of which it is my privilege to be a member." This gentleman states that it is his opinion that the great cause of deflection of the nasal septum is obstruction to one side of the nose, producing through respiration increased atmospheric pressure upon the septum toward the stenosed side. To explain more fully, when we remember the development of the septum, composed of two bones and one cartilage, the ossification of the plates of the vomer and ethmoid commencing very early and having a single center for the ethmoid and two more for the vomer. These [parts very soon become firm and rigid. Now it is important for us to remember that it is the anterior and central segment that is the thinnest, while the posterior and upper part of the septum maintains a uniform degree of consistency. Now it has been determined with considerable accuracy that the area of the nasal septum is about nine inches, the atmospheric pressure then being fifteen pounds to the square inch, we can easily see that this nine inches represent a non-inconsiderable factor. One nasal cavity being plugged, we find by virtue of the exhaust of the air pressure in that cavity, produced by the swift current of inspired and expired air passing through the patent side, that a pressure is being constantly brought to bear upon the septum, a series of bowes as it were, constantly being repeated, of from three to four and one half pounds, which would seem to be quite sufficient to produce a bulging of the septum at its weakest point toward the side of least resistance, namely, toward the stenosed side. In cases where the deflection is insignificant, symptoms may be also entirely absent. Out of 200 cases in which the deformity was slight, it was found that in ninety-two (almost half), there were no symptoms referred to the nose but such

as there were, pointed to other organs (throat and ear). In cases where the deformity is somewhat more marked, we find upon one side an unusual broadening of the nasal cavity, and upon the other side, corresponding to the convexity of the deflection, a partial stenoses. The symptoms refer principally to two classes of cases, those in which the deformity is sufficiently great to produce obstruction of the nose and those in which we have pressure upon the nerves, those of special and those of general sensation—that of special sense being the olfactory, the filaments of which are distributed to the upper third of the septum. Those of general sensation being the sphenopalatine branch of the second division of the fifth, which supplies the upper and back part of the septum. Anterior palatine which is distributed to the inferior and middle turbinated bodies, the nasal branch of the ophthalmia which ramifies on the upper part of the septum and upper portion of external wall, giving rise to certain reflex phenomena.

As to the symptoms relating to the first variety, it may be stated that catarrh of the nose and naso pharynx with all its consequences, may be said to arise directly from this cause. Swelling and congestion of the mucus membrane, and particularly the parts covering the turbinated bodies, will be present which results in a permanent hypertrophy. Hypertrophic enlargement of the turbinated bodies upon the side corresponding to the concavity, will usually after a time be present, from the fact that the whole current of inspired air passes through that one nostril, throwing unnecessarily the work which should have been done by the turbinated bodies of both sides, upon those of one side. Many forms of throat trouble result directly from obstruction to the nasal breathing, patients being obliged to resort to buccal breathing. The inspired air which normally should be warmed and moistened by the turbinated bodies, meets the mucus membrane of the pharynx and the parts below, in an unprepared state, unmoistened, unwarmed and containing minute particles of foreign substances which should have been filtered out as it were, by the hairs which are found in the anterior part of the nose. As a result of this, buccal breathing, we have a well known form of disease, spoken of as pharyngitis-sicca.



In some instances, however, the glandular elements in the mucus membrane lining the pharynx undergo hypertrophy in consequence of an irritation and, we then have the converse of pharyngitis-sicca; viz., pharyngitis-granulosa-follicularis. In another class of cases we find that on account of the catarrhal state of the mucus membrane, the secretion begins to be more abundant and as the anterior openings of the nose are obstructed, the secretion accumulates and is retained in the narrow places, where it thickens, changes color, and dries, adhering in crusts which decompose and give rise to a disagreeable foetor. This condition we recognize as ozena. This condition is indeed lamentable, the odor being of an intolerable character and the patient becomes a veritable nuisance to his family and his friends. He himself, does not appreciate the odor, but he is made aware of it by the manner in which his friends shun him. The patients gradually become melancholy and morose, losing interest in things about them and are in every way supremely miserable. Buccal breathing gives rise to chronic catarrh of the larynx on account of the irritation of the inspired air.

Deviations of the septum may also unfavorably influence the state of the ears by producing nasal catarrh, which gradually spreads to the Eustachian tube, and thence to the middle ear and by mechanical obstruction, preventing proper treatment by Politization and Eustachian catheter injections, and so on. Among the reflex phenomena which are observed, may be mentioned sneezing, coughing, sense of suffocation, asthmatic attacks, lachrymation, pain at the base of the nose, etc. A case is reported by Creswell Baber, in which sleeplessness was completely cured after a radical operation for relief of deviation of the nasal septum.

*Treatment.* This may be palative or radical. In the palative form of treatment, we do little else than remove some of the consequences, and it is not necessary to dwell upon this branch of the treatment. Where we have deviations of the septum, complicated by polypi or post-nasal growths, or hypertrophy of the turbinated bodies, it is first necessary to treat such complication. As to the radical form of treatment, it may be well to say a word as to the cases which justly require operative measures and those that do not. Some

gentlemen attach perhaps too much importance to these deviations and therefore resort too often to operative procedures. Upon the other hand, the deviation may be so slight as to apparently be unworthy of radical measures.

The cases in which radical means may become appropriate may be put under five heads. First. Those in which we get respiratory troubles. In considering these troubles, we must as far as possible, assure ourselves that the symptoms depend upon and arise from this source, and do not depend upon other conditions, for instance, upon the existence of post-nasal growths. Second. Those cases in which we get reflex disturbances, cough, asthmatic attacks, different neuralgias, etc. These symptoms, as a rule, are very persistent and last for years, giving rise to no end of trouble and yielding to nothing but the removal of the deviation. Again, however, may a word of caution be uttered, for asthma, neuralgia, etc., arise from other causes and often they do not cease upon the removal of this *suspected* cause. Upon the contrary, cases have been reported in which asthma has been much increased by operations upon the nose. Hence, if in our judgment the operation be indicated, in view of the necessarily unforeseen uncertainties, a guarded prognosis should be given. Third. The indication for operative measures should be *oral* troubles, resulting from deviations of the septum and as I have before mentioned, causing obstructions to the treatment of the existing ear trouble. Fourth. Where nasal polypi are present and in which their removal is made well nigh impossible by virtue of the inability to introduce proper instruments, from the fact that a spine or crista, be present upon the septum. Fifth. Cases in which traumatism has resulted in deformity, noticeable externally, from an aesthetic point of view, the resection of the cartilagenous portion often becomes necessary.

Concerning the operation itself, considerable might be said, but wishing to draw this "perhaps already too long" paper to a close, I hasten on to conclusion. Orthopedic methods have been strongly advised by some of the authors, such as continuous pressure upon the tip of the nose with the finger, towards the opposite side. Stoker and Mackenzie frequently employ cotton tampons introduced into the



stenosed cavity for some hours or even days. But little benefit may be expected, however, from this treatment. Orthopedic methods are only productive of favorable results in recent cases, particularly of traumatic origin. In 1875, Adams constructed a forceps for straightening the cartilagenous part of the septum. The instrument was improved in 1882, by Jurasz of Hiedelburg. The operation consists of introducing the blades in each nostril separately, having previously covered them with iodoform and vaseline, and then fastening the blades together by means of a screw, gradual pressure is exerted upon both sides of the septum. The operation is extremely painful, and results do not warrant its adoption. The only cases in which this method is at all indicated, are cases in which the deviation is principally confined to the cartilagenous portion of the septum, or, perhaps, cases of the sigmoid variety in young persons.

The galvano cautery, as a means to an end, is strongly supported by George Stoker, Voltoneni, Schaffer, Walsham and others, and is undoubtedly, in certain cases, of unequalled value. Moure, of Bordeaux, read a paper before the International Congress, in Berlin, in 1890, strongly supporting this method of treatment. The *knife* is principally used preceding operation itself; for example, for an incision of the mucus membrane before resection of the cartilage, or perhaps less frequently for the removal of spurs of the septum. It is well to employ a knife with a blunt point, so to avoid wounding the healthy parts behind the deviation. Jarvis, of New York, strongly supports the ecraseur. In using this instrument, it is necessary to make an incision in the cartilage before adjusting the ecraseur, otherwise it may slip. Bosworth, of New York, has given us, perhaps, the most useful of instruments used in operating upon the septum, viz., his well-known nasal saws. This method is strongly supported by Rosenthal, Moure, Casselburry and others. These saws are of two varieties, one arranged for cutting upward and another downward. Before using the saw it is well to make an incision in the mucus membrane with the knife. In so doing, we thus avoid adding to the already painful operation and increasing the necessarily abundant bleeding. In very rare cases, gangrene of the torn parts of the mucus mem-

brane, has supervened. If we are careful in observing the necessary precautions, this operation generally results with entire satisfaction and healing ensues without suppuration. Chisels of different size and breadth are also used and require mention. By means of these instruments after we have divided the mucus membrane, we are able to destroy the deflected part of the septum easily and quickly, particularly if there be spurs. Latterly among the English and American operators the dental drill has come into use. The electric motor drill was first introduced for this purpose by Jarvis, of New York, and these instruments are now largely used by Hovill, Hill, Lenox Brown, Brunner, Curtis, McIntyre, Spicer and others. The punch, used by some for the purpose of perforating the nasal septum, has several disadvantages. First, the difficulty of inserting this instrument on account of the stenoses of the nasal cavity; and second, the deviation itself remains unchanged. The air passes in and through the opening made by the punch to the nasal cavity upon the opposite side, thus the secretions still collect behind the real point of obstruction and the turbinated bodies of one side still do the work of both sides. Roberts makes a resection of the cartilage under the mucus membrane, thus avoiding perforation. Asch by means of specially constructed scissors, makes a crucial incision; the septum is then straightened and by suitable instruments is kept in position. Undoubtedly one of the best methods is that resorted to by Scheck, who makes resection of the convex part of the septum in its whole thickness. Perforation it is true, is thus many times produced, but that in itself is not hurtful and does not produce changes externally. This operation has one paramount advantage, viz., its simplicity. To read the detailed accounts of some of the cutting operations by many of the earlier operators, of the intricate dissection made by these gentlemen, might perhaps prove interesting, but upon practical application their methods will be found to be attended by difficulties which completely out-balance the advantages.

In the earlier days of Rhinology, possibly its students were not sufficiently bold in their operations, but if such was the case, perhaps it may be said with equal truth, that in our latter times, severe cutting operations have been too often



resorted to. To formulate a rule by which treatment, (whether palative or operative), may be administered, I would suggest first, in cases of traumatic origin, particularly in children if recent, use tampons of wool. Second. In older patients and in cases of longer standing, after having separated the mucus membrane, if spurs be present, use the chisel or Bosworth's saws. When the deflection involves a large portion of the cartilage and is without thickening, although a perforation may be produced, Scheck's method of resection would seem advisable. In cases where a bony ridge at the junction of the cartilagenious with the bony portion exists, running backward, Bosworth's saws will be found the most useful. Antiseptic douches should be used after any of the operations.

If in this paper I have dropped a few seeds which are worth the growing, I am indeed gratified; but if we have only been journeying amid the barren plains, let us descend into the valleys of more productive research.

---

### ORTHOPTIC TRAINING.\*

BY C. M. CULVER, M. D.

IN an article which I read before this Society, in February, 1887, it was predicted that, within the next decade thereafter, the efficiency of our armamentarium, with which to combat convergence anomalies, would be more than doubled.† It was prior to that time that orthoptic training assumed its place among our means for use in that class of cases, but it has since come to be understood as standing very high in its class, in efficiency. It is not as often applicable as is Dyerization, which is a similar training of all the ocular muscles which preside over vision of near objects, but is closely akin to that method of treatment. Indeed, Dyerization is a conjunction of orthoptic training with systematic training of the ciliary muscles. It is assigning orthoptic training a high rank, as regards utility, to place it as a part of Dyerization, which Mr. R. Brudenall Carter,‡ of St. George's Hospital, London, praises most highly and which Dr. Lippincott declared, at the last session of The American

---

\* Read before the Albany County Medical Society, January 13, 1892.

† *Albany Medical Annals*, May, 1887, page 151.

‡ *Carter*. Eyesight, Good and Bad, page 149.

Ophthalmological Society, to be among the foremost of modern discoveries, in ophthalmology. Its great helpfulness to my patients has taught me to esteem it very highly.

The translation of the Greek word is, "straight," or "right," in the sense in which these words are used in speaking of a straight or right line; the muscles, which undergo orthoptic training, have to do with directing the lines of vision of a pair of eyes, hence this sense might seem applicable in this case. But those lines of vision are straight, however directed, and the muscles trained, orthoptically, control only the observance of, or divergence from, parallelism, of those lines. But the prefix, in the word "orthoptic" has the meaning it has in "orthodoxy," that is, "correct." Although it is primarily essential that the practicing ophthalmologist, when dealing with the average case of abnormality of the directing muscles of the eyes, take fully into count the modifying influence of co-existing accommodation, the phrase, "orthoptic training," has been limited, in its application, to the extrinsic muscles of the eyes. Hence, although Dyerization is the systematic training which enables eyes that were formerly, muscularly impotent relatively, to accomplish an average amount of near work, "correctly," the accepted application of orthoptic training, is not directly to any other than the extrinsic, or directing, muscles of the eyes.

Many authors have spoken of gymnastic training of the extrinsic muscles, by means of prisms. It is an essential of binocular vision that the images, for the two eyes of a pair, be formed upon corresponding parts of their retinae. When such images are formed on heterologous parts of the retinae, diplopia results. Hence, as those endowed with binocular vision instinctively avoid diplopia, the extrinsic muscles, whenever that is possible, bring the eyes of a pair into such relative positions that the images of the object fixed are formed upon homologous parts of their retinae. A prism deflects a ray of light, from the course it has pursued, in a direction toward the base of the prism. Accordingly, if a prism be made to deflect the rays from any object so that, for one eye of a pair, they impinge on a part of its retina, which does not correspond to the part upon which the image in the fellow eye is formed, diplopia results.



When the extrinsic muscles can so move the eyes as to make the parts of the retinae, upon which the images are formed, correspond, binocular, single vision ensues. It is in this way that prisms are used for the training of the extrinsic muscles, by causing those muscles to act. Dr. Noyes,\* in his work, has called this "gymnastic" training, and commended it. While it has been somewhat discussed with reference to its applicability to the extrinsic muscles which cause vertical movements of the eye-balls, that use of the method does not appear to me of practical utility and, so far as my own experience is concerned, I am not aware of a case in which it has done any good, nor do I recall a case in which I have attempted to make use of it. That it is possible to produce a certain degree of increase in power, of such a muscle, by its systematic exercise, by such means, is conceded, but its practicality is questionable, since, if the degree is slight, a permanent prism may more readily do the same work, and if the degree be great, nothing is properly in order but operative procedure. Of course prisms compose, theoretically, by the combination of an infinite number of them, any lens that can be mentioned, and they enter, practically, into ophthalmological practice, as in von Graefe's vertical-diplopia test, in the double prism of the Javal-Schiotz Ophthalmometer, and in Maddox's double-prism. I value prisms, therapeutically, when worn, much more than I formerly did; having been led, by Dr. Noyes' suggestions, to use them more, in practice, and by the experience in practice, to esteem them more highly. But while I am disposed to hold, generally, the just position held by Dr. Noyes, of neither praising them without stint nor utterly condemning them, I think prisms have been too much relied upon, by ophthalmologists, both as means of diagnosis and as therapeutic agents. Several ophthalmologists have lately, publicly expressed a similar opinion.† I have just cited the forms of them, suggested by von Graefe and Maddox, used as aids to diagnosis, but, even here, Maddox's stirring-rod test, for which the apparatus, necessary, can be bought for the 1-4800th

---

\*Noyes. Diseases of the Eye, 1890, page 199.

† Vide Risley: A New Apparatus, etc. The Medical and Surgical Reporter, fifth December, 1891. Vide Myles Standish, Amer. Jour. of Ophth., November, 1891, page 372.

of the price of the von Graefe test that I customarily use, is adequate, in the average case. I use several methods, in such tests, but the stirring-rod is the one on which most dependence is placed. In the training, or exercise of the lateral recti muscles prisms are of more use than elsewhere, especially when it is the recti *externi* that we seek to influence. In all near work, the *interni* of a pair of average eyes are brought into use, in answer to a volition. But the *externi* cannot be voluntarily made to act, hence the use of weak abducting prisms. The normal power of a pair of *recti externi* amounts to that used in overcoming abducting prisms aggregating 3.50 minimum deviation degrees, to do which the eyes recede from each other about one metre-angle. While adducting prisms may be used, for the exercise of the internal *recti*, that is a very primitive method, and one which has sunk into comparative disuse. I recall a case, wherein this method was used, with satisfaction to all parties. But it required daily visits of the patient, at my office, for a month. Since that time I have procured, in similar cases, as good results, with much less work for the patient. The average person has nothing to do with prisms, except, as a child, to be amused a few hours with a mutilated one, which formerly helped to adorn a chandelier. Hence, when it is a question of using the internal *recti*, which an average pair of eyes always uses, when near work is being done, it seems like a wild chase round Robin Hood's barn, to resort to prisms, when the binocular fixation of any near object will accomplish the same action of the internal *recti*. Since prisms are so seldom dealt with by the average person, it is true that, in many cases, the amount of power represented by the amount of prism-deflection that a pair of internal *recti* can overcome, is often much less than the power actually at the disposal of these muscles. In such cases the lack is not of force, but of knack. I recall a case, which I saw about eight years ago, in which the patient seemed to have utterly immobile eyes, so far as adduction was concerned. She called on me, daily, four times. The three first days showed no improvement. The third day's call was almost exclusively devoted to attempting to show the patient what was wanted of the eyes. The last time she came, she announced, on entering the consultation room,



that she had been able to make the eyes do what I required of them. And it was true and the defect had entirely disappeared. The patient had not acquired any power, which enabled her to annihilate the defect, but had merely learned the knack of combating the action of adducting prisms. In another case, the patient appeared to have no adductive power in the morning, that being at a time when I used prisms, mainly for the test of such function. In the afternoon of the same day, I gave the patient prisms aggregating more than half the amount that can be overcome by a normal pair of eyes. Presently he said to me, as I sat several metres distant for him: "I see you single, at times, but not at all distinctly, at those times." Of course, in order to converge to any considerable extent, the concomitant function of accommodation needed to be used, simultaneously, and, equally of course, that rendered any object, ten feet distant, blurred to the eyes that were viewing it. Mr. F. had acquired at least fifteen times the ability, to converge, that he had shown, during the forenoon of the same day. In other words, he had acquired the *knack* of using prisms. In neither of these cases was the seeming lack of converging power, in the beginning, due to a want of intelligence, for the girl seemed bright and Mr. F. is one of the most intelligent men of my acquaintance. Hence we may expect to meet with similar cases of response of the *interni* to the influence of prisms, among those composing the average *clientele*.

In discussing this matter, Dr. Oliver\* has written, about adducting prisms: "The ability to overcome prisms equal to fifty degrees implies, in most cases, an ability indefinitely exceeding this and many who, at first trial, can accomplish only one-half of this, will after two or three attempts, on different days, succeed in uniting images with the full strength of the adducting prisms." As a fixation-object, when it is desired to practice the systematic use of the *interni*, Landolt's ophthalmodynamometer is the best we have, it being the nearest practical realization of the luminous line, or point. I have used various forms of it, but have last adopted that which is used with an ordinary candle. When last in

---

\* Ann. of the Universal Medical Sciences, 1889, Vol. IV, page B-44.

London, I got a point, from Mr. R. Brudenell Carter, which I have found useful. He suggested to me the putting of the red glass, in a pair designed for use in orthoptic training or as a part of the apparatus employed in Snellen's test, with red and green letters, always on the right side, because the letter "R" is the initial of both red and right. It is only of mnemonic utility, but I have used it to much advantage. In a pair of spectacles, used in orthoptic training of the *interni*, one glass is made red, in order that the image, received by that eye, may be reddened, and, consequently, more readily distinguished, as a separate image, if there be real diplopia. The other ellipse of the frame may be empty, since the object is solely to obtain images with some evident difference between them. For use, in this connection, I devised a black card, bearing a white line, this being in order that the object, which the line constitutes, may be susceptible of coloration, like the luminous line obtained when using Landolt's dynamometer. It is not my purpose to cite case-histories in connection with this paper. It would be possible, however, to cite many cases in which this simple, card apparatus has sufficed to obtain satisfactory results, when it has been used in connection with orthoptic training. The longer arm is of such length that when its free end is placed against the bridge of the average nose, the other arm, bearing the white line, will be eleven millimetres from the person's eyes. Hence, when the free end of longer arm is against the nose bridge, and the object line, on the shorter arm, at right angles to its longer one, is seen binocularly and single, nine metre-angles of convergence (the minimum-normal) are being performed by the eyes in question. The use of such a fixation-object as a finger, which has been too commonly employed, in tests or training of the internal *recti* muscles, suggests what Dr. Randall said, in a paper before the American Ophthalmological Society, in '89, that "No eye, with a self-respecting accommodation, could focus for such a point." It is desirable too, that the fixation-object be white, on a black ground, in order that its coloration may be feasible. When the Red-Right hint of Mr. Carter's is used, and a patient resides at a distance, if he writes that the red line is to the left, the



surgeon knows at once that the convergence does not suffice. If too much convergence were employed, for the distance of the object, the red line would be at the right.

Landolt's stereoscope is specially serviceable in the training of the lateral *recti* muscles. The ordinary stereoscope lenses are each the combination of a bi-convex lens, of six dioptries, with an adducting prism of six minimum-deviation degrees. Landolt's stereoscope is of the dimensions of the ordinary one, and generally like it, except that there are no prisms used in it, and each of the simple convex lenses, of six dioptries, is movable, horizontally, about forty millimetres. By the possible decentration of the lenses, a great deal of prismatic effect is obtainable, in either sense, hence the potential control of the amount of task imposed upon the eyes concerned. This apparatus has been specially useful to me in cases wherein I have already operated for the correction of strabismus. While I am content with the final results of my squint-operations, I must be permitted to be a skeptic as to anybody's ability to do accurately what an English reviewer has blamed me for calling "dose" these operations. "Landolt insists upon the importance of combining an orthoptic treatment with an operation for strabismus. His views on this question are to be found in a concise form, in the official report made by him to the international congress for Ophthalmology, at Heidelberg." \*

Orthoptic training is often the most primary observance of physiology, in connection with the extrinsic, ocular muscles. In many cases, too, it constitutes the ounce of prevention that is worth a ton of cure, in the cases where it is applicable as a preventive.

---

## THE PAN-AMERICAN MEDICAL CONGRESS IN THE UNITED STATES OF COLUMBIA.

PURSUANT to nominations by Dr. Pierre M. Ibanez of Bogora, member of the International executive committee for the United States of Columbia, the following organization of the Pan-American

---

\* Ann. of the Univ. Med. Sci., 1889, Vol. 4. page B-48; *vide* Landolt, *Rapport, sur la Question du Strabisme, presente au VIIe Congres International d'Ophthalmologie a Heidelberg*, page 11.

Medical Congress has been effected in that country: Vice president, Dr. Pio Rengifo, New York; secretaries of section: general medicine, Dr. Ignacio Gutterrez Ponce, Paris; general surgery, Dr. Raefel Rocha Cassilla, Bogota; military medicine and surgery, Dr. Abraham Aparicio, Bogota; obstetrics, Dr. <sup>a</sup> Joaquin Maldonado, Bogota; gynecology and abdominal surgery, Dr. Jose M. Buendia, Bogota; therapeutics, Dr. Manuel Plata Azuero Guadnas; anatomy, Dr. Joan D. Herrera, Bogato; physiology, Dr. Antonio Bargas Vega, Bogota; pathology, Dr. Nicolos Osorio, Bogota; diseases of children, Dr. Ant. Gomez Calvo, Bogota; ophthalmology, Dr. Proto Gomez, Bogota; laryryology and rhmology, Dr. Louis Fonnegra, Bogota; otology, Dr. Carlos Esguerra, Bogota; dermatology, Dr. Daniel E. Coronado, Bogota; orthopædics, Dr. Juan E. Manrigue, Bogota; naval, hygiene and quarantine, Gabriel I. Castaneda, Bogota; general hygiene and demography, — —; mental and nervous diseases, Dr. Pablo Garcia Medina, Bogota; oral and dental surgery, Dr. Guillermo Vargas Paredes, Bogota; medical pedagogics, Dr. Jorge Vargas, Bogota; medical jurisprudence, Dr. Leoncia Barrets, Bogota.

*The International Executive Committee of the Pan American Medical Congress.*

The Committee on Organization of the Pan American Medical Congress at its meeting at St. Louis, last October, elected the following International Executive Committe: The Argentine Republic, Dr. Pedro Lagleyze, Beunos Aires; Bolivea, Dr. Emelio Di Fomassi, La Paz; Brazil, Dr. Carlos Costa, Rio de Janeiro; British North America, Dr. Jas. F. W. Ross, Toronto; British West Indies, Dr. James A. De Wolf, Port of Spain; Chili, Dr. Moises Amaral, Santiago; United States of Colombia, Dr. P. M. Ibanez, Bogota; Costa Rica, Dr. Daniel Nunez, San Jose; Ecuador, Dr. Ricarda Cucalon, Guayquil; Guatamala, Dr. Jose Monteris, Guatemala Nueon; Hati, Dr. D. Lamothe, Port au Prince; Spanish Hunduras, Dr. George Bernhardt, Feguagalpa; Mexico, Dr. Tomas Noriega, City of Mexico; Nicaragua, Dr. J. I. Urtesho, Grenada; Peru, Dr. J. Casamira, Ulloa Lima; Salvador, Dr. David J. Guzman, San Salvador; Spanish West Indies, Dr. Juan Santos Fernandez, Habana; United States, Dr. Vanderveer, Albany, N. Y.; Uruguay, Jacinto De Leon, Mintevidea; Venezuela, Dr. Elias Roderiguez, Caracas.

Hiwail, Paraguay, Sato Domingo, The Danish Dutch and French West Indies are not yet organized. Nominations of local officers have been received from a majority of all the members of the International Executive Committee, and a number of the lists have been confirmed



by the Committee on Organization. These will be announced as rapidly as acceptances are received.

CHARLES A. L. REED,  
Secretary-General.

CINCINNATI, *January 15, 1892.*

*Auxiliary committee* (each member being the official representative of the Congress in his respective city) : Dr. Nicolas Osorio, Dr. Andres Posada Arango, Dr. Jorge E. Delgado, Dr. Eugenio de la Hoz, Dr. Doningo Cagiao, Dr. Jose Manuel Rodnguez, Dr. Paulo Emelio Villar, Dr. Felix M. Heonandez, Dr. Rafael Calvo, Dr. N. Ribon, Dr. Milceades Castro, Dr. Cayetano Lombana, Dr. Jose M. Martinez, Dr. Isaias Saavedra, Devero Forres, Dr. N. Villa, Dr. Everisso Garcia, Dr. Miguel Caicedo, Dr. Ernile Villamizar.

The following medical societies have been elected as auxiliaries of the Congress, viz.: *Academia Nacional de Medicina, Academia de Medicina de Medellin, Sociedad de Medicina del Cauca.*

The following journals have been designated as officials organs of the Congress, viz.: *Revista Medica, Bogota; Revista de Higiene, Bogota; El Agricultor, Bogota; Boletin de Medicina del Cauca, Cali; Anales de la Academia de Medicin de Medellin, Medellin.*

The expressed wish of the profession of the United States of Columbia, is for a date of meeting during the Columbian Exposition.

CHARLES A. L. REED,  
Secretary-General.

CINCINNATI, *January 17, 1892.*

*Contagious Diseases.—Monthly Statement.*—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the month ending January 31, 1892:

	Cases.	Deaths.
Typhus fever.....	0	0
Typhoid fever.....	16	4
Scarlet fever.....	57	14
Cerobro-spinal meningitis.....	0	4
Measles.....	229	7
Diphtheria. . . . .	17	12
Small-pox.....	0	0
Vericella.....	16	0

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

---

VOL. XIII.—No. 2. FEBRUARY, 1892. \$1.00 A YEAR.

---

---

## INFLUENZA.

AT the end of the year 1889, when the influenza first became prominent, it was under the name of *La Grippe*, considered as rather a fashionable maledy, or at any rate was looked upon lightly, and not as a serious disease.

Now, however, as the knowledge of its dangers has become wide-spread, the masses are apt to run to the other extreme and to exaggerate its mischief. The truth lies probably between the two; for although the influenza is *per se* not especially dangerous, yet its consequence may be disastrous in the extreme. Statistics have shown that during the epidemic of influenza, the average death rate is largely increased. The average number of deaths directly ascribed to the disease is, indeed, not great, but it seems to pave the way for the approach of the enemy in many directions. Particularly is this the case in those whose constitutions are enfeebled by chronic ailments, particularly of the heart or lungs, and these weaklings seem especially prone to attack. In them influenza is apt to light up a fierce fire that is quenched in death only. Even among the previously healthy it frequently leave its traces in after-effects from which they are long in recovering, and may even prepare a nidus for other and more dangerous diseases. So that its evil results are capable of becoming wide-spread.

During an epidemic, a cold, or cough, or inflammation of nearly any sort, is apt to be dignified by the name of influenza, and it is only when we banish the idea that catarrhs are



necessarily present, and confine ourselves to the fundamental principle that the influenza is an acute contagious specific fever that we are able to appreciate its nature. Although its symptoms are multitudinous, yet they can be referred to two general groups. Nervous, and catarrhs of the respiratory or alimentary tracts.

The symptoms depending on these two general classes may blend with one another or succeed each other in the same case, with bewildering confusion and it is these combinations which give at first sight such a marked complexity to this disease.

Unless further observation should confirm the investigations of Pfeiffer, we are still in doubt as to the exact cause of the poison; that it must, however, be a living germ seems certain, as nothing else explains the facts. In times past it has been ascribed to the most varied causes from the untoward actions of the heavenly bodies to swarms of insects. These causes have, one after the other, been discredited and have become simply a matter of history. So many trustworthy reports have been published showing its direct contagion, and so many communications proving it to be carried by the winds, that we are probably right in accepting both these ways of conveying the germs.

---

### THE INFLUENZA-BACILLUS.\*

*I. Preliminary Communication on the Exciting Causes of Influenza.* By DR. R. PFEIFFER, Chief of the Scientific Section.

The following are based on the accurate examination of thirty-one cases of influenza, in six of which a necropsy was made. A complete report will be published as soon as possible:

1. In all cases of influenza a bacillus of a definite species was found in the characteristic purulent bronchial secretion. In uncomplicated cases of influenza these tiny bacilli were found in absolutely pure cultures, and mostly in immense quantities. They were very frequently situated in the the protoplasm of the pus-corpuscles. If the influenza had attacked persons who bronchial tubes were already otherwise diseased—as, for example, tuberculous patients with cavities—other micro-organisms besides the influenza-bacilli were found

---

\* From the advance proof-sheets of the *Deutsche medicinische Wochenschrift*, in the *British Medical Journal* of January 16, 1892.

in the expectoration in variable quantity. The bacilli may penetrate from the bronchial tubes into the peribronchial tissue, and even reach the surface of the pleura, where, in two cases examined *post mortem*, they were found in pure cultures in the purulent exudation.

2. These bacilli were found exclusively in cases of influenza. Very numerous control examinations proved their absence in ordinary bronchial catarrh, pneumonia, and pulmonary tuberculosis.

3. The presence of bacilli kept equal pace with the course of the disease; with the cessation of the purulent bronchial secretion the bacilli began to disappear.

4. I had already seen and photographed similar bacilli in the same enormous quantities two years ago, during the first epidemic of influenza, in preparations of the sputum of patients suffering from the disease.

5. The influenza-bacilli appear as very tiny rodlets, of about the thickness of the bacilli of mouse-septicemia, but only half the length of these. One often sees three or four bacilli strung together in the form of a chain. They stain with some difficulty with the basic anilin dyes. Better preparations are obtained with dilute Ziehl's solution and with hot Löffler's methylene-blue. In this way it can be seen almost as a rule, that the two ends of the bacilli take the stain more intensely, so that forms are produced that can only with great difficulty be distinguished from diplococci or streptococci. In fact, I am inclined to believe that some of the earlier observers also saw the bacilli described by me, but that, misled by their peculiar behavior with regard to staining agents, they described them as diplococci or streptococci. The bacilli cannot be stained by Gram's method. In hanging drops they are immobile.

6. These bacilli can be obtained in pure cultures. On one and one-half per cent. sugar-agar the colonies appear as extremely small droplets, clear as water, often only recognizable with a lens. Their continued culture on this nutrient medium is attended with difficulties, and up to the present I have not succeeded in carrying it beyond the second generation.

7. Numerous inoculation-experiments were made on apes, rabbits, guinea-pigs, rats, pigeons, and mice. Only in apes and rabbits could positive results be obtained. The other species of animals showed themselves refractory to influenza.

8. In view of these results, I consider myself justified in pronouncing the bacilli just described to be the exciting cause of influenza.

9. It is very probable that infection is produced by sputum charged with the germs of the disease; and the disinfection of the



sputa of patients suffering from influenza is therefore urgently required as a prophylactic measure.

*Addendum.*—Dr. Kitasato has succeeded in cultivating the influenza-bacilli to the fifth generation on glycerin-agar.

*II. On the Influenza-bacillus and the Mode of Cultivating it.* By DR. S. KITASATO.

It is, perhaps, remarkable that in the case of a disease that in the last few years has attacked hundreds of thousands of persons, the specific exciting causes have, in spite of extremely numerous investigations, only lately been discovered. The cause, in my opinion, lies in the extreme difficulty of cultivating the tiny bacillus, and, without pure cultures a bacteriologist cannot, of course, come before the public with a new specific microorganism.

The difficulty of obtaining cultures of specific bacteria present in the sputum depends chiefly on the great contamination with microorganisms from the mouth, etc. The latter, in consequence of their more luxuriant and abundant growth, can, on our artificial nutrient media, completely overgrow and hide the particular parasites sought for. This occurs all the more easily the longer the time required for the specific parasitic microorganism in question to form colonies, as in fact happened in the case of the tubercle-bacillus.

With the view of avoiding the obstacles in the way of a successful cultivation, Privy Councillor Koch has devised a method that has not yet been published, which enabled him many years ago, and myself again quite recently, to obtain pure cultures of tubercle-bacilli directly from the sputum, and which has also now been followed by me. The method to which I have just referred will soon be published in full detail.

With regard to the characteristics of the pure cultures of influenza-bacilli, I may emphasize the following points: On a sloping surface of set glycerin-agar the individual colonies present themselves as extremely small points, like droplets of water, recognizable during the first twenty-four hours only with the aid of a lens, so that macroscopically a test-tube containing them can scarcely be distinguished from a sterile one. The individual colonies are, as has been said, so unusually small that they may easily be overlooked, and it may thus have happened that previous investigators have overlooked them.

If a culture obtained from such a colony is placed on a new nutrient agar medium, numerous small colonies arise on the moist agar surface. A particularly remarkable point is that the colonies always

remain separate from each other, and do not, as colonies of all other species of bacteria known to me do, join together and form a continuous row. This feature is so characteristic that the influenza-bacilli can thereby with certainty be distinguished from other bacteria.

The possibility of continued cultivation is now demonstrated. I have been able to reach the tenth generation in pure cultures. On gelatin the baccilli do not grow, as they do not generally multiply at a temperature lower than 28 degrees C., which is the temperature at which gelatin solidifies. In bouillon they grow scantily. In the first twenty-four hours, single white particles are seen swimming in the bouillon, the intervening fluid being perfectly clear. Later, they sink to the bottom, and there form a white, woolly mass, whilst the supernatant bouillon remains entirely clear—a proof that we have to deal with an immobile bacillus. In conclusion, I may remark that I have accurately studied with the microscope and by culture for a long time the sputa of tuberculosis in respect to all the micro-organisms besides the tubercle-bacillus occurring therein, and also the sputa of pneumonia, bronchitis, etc.; but the present bacillus, so extraordinarily characteristic in its cultures, and so easily to be recognized, has not come within my experience except in influenza patients.

### *III. On a Micro-organism in the Blood of Influenza Patients.*

By DR. P. CANON, Assistant Physician in the Hospital Moabit, Berlin,

During the last few weeks I have, under the direction of Dr. P. Guttman, examined the blood of twenty influenza patients in stained preparations, and in almost all cases I have found in the blood one and the same micro-organism. The examination of the blood was made in the following way: A drop of blood obtained by pricking the finger was received on a perfectly clean cover-glass; this cover-glass was placed upon another, and the two then drawn apart. The preparations, after they had been thoroughly dried, were placed in absolute alcohol, in which they were left for at least five minutes. They were then taken out and placed in the following staining solution (Czenzynke's solution): Concentrated watery solution of methylene-blue, 49 grams; 1-2 per cent. eosin solution (dissolved in 70 per cent. alcohol) 20 grams; distilled water, 40 grams. The cover-glasses immersed in this staining solution were placed in an incubator at a temperature of 37 degrees C., and left there for from three to six hours, when they were washed with water, dried, and imbedded in Canada balsam. In the preparations of blood made in this manner, where the red blood-corpuscles were red and the white ones blue, I found the micro-organism referred to. It is found stained blue, sometimes in large quantities, but mostly sparingly, and only to be identi-



fied after a long search (about four to twenty in the preparation). Sometimes it appears as a small diplococcus; sometimes, especially when it is more deeply stained, as a short bacillus.

In six cases I have found it also in numerous larger and smaller heaps of from five to fifty individual microbes with a very characteristic appearance. In these six cases, the blood was drawn during a fall of temperature or shortly afterward; in three of these, no further rise of temperature occurred. From three to six days later I failed to find the micro-organism in the blood in these three last cases. Sometimes by means of preparations of the blood alone, I have been able to make the diagnosis of influenza, when clinically it was not certain. I have also found the bacteria in the blood, and, indeed, in considerable quantities in cases in which there was no appreciable local lesion, and especially no cough or expectoration. While making the preparations I have generally at the same time made streak-inoculations of the blood on agar-glycerin-agar, sugar-agar, and bouillon. In six cases the bouillon was injected into mice, partly at once, partly on the following day after it had been in the incubator. These inoculations and experiments on animals always yielded a negative result. As on the basis of my researches I am of opinion that this micro-organism occurs in the blood of all persons suffering from influenza (at least, in that of those who have fever), and as it is not found in the blood of other persons, and as it is a micro-organism hitherto unknown, I believe that it stands in direct relation to influenza.

Privy Councillor Koch had the goodness to examine some of my preparations, and pointed out that the micro-organism visible in them was identical with the bacterium found by staff-surgeon, Dr. Pfeiffer, which has been described in the preceding paper, which is published at the same time as mine. I began these researches about the middle of December; I have, however, still a large number of preparations to stain and to examine. I propose to publish the results of the further research in a later communication.—Medical News.

---

#### ANNOTATIONS.

*Wanted—A Cure.*—The influenza is once more in the air, wafted hither and thither throughout the habitable globe, a formidable, disabling and fatal pandemic. Once more we are urgently asked on all sides, "Have we a specific? Can we offer a cure?" It is the old delusion, and the everlasting and unreasoning, but excusable, impatience for the miraculous and the impossible. "Disease comes by Providence

and goes by medicine ;” that is a durable and popular formula. Of specifics for sale, there are, of course, a legion. To sell them is the business of the quacks ; the Matteis, the Holloways, the Morrisons, abound in specifics. There are a dozen available for cholera, for typhoid, for small-pox, for hydrophobia, for carcinoma—all equally plausible and equally useless, except for commerce—and why not for influenza? But is there a specific for any disease? It is more than doubtful. The more we know of the nature and the cause of the disease, of its origin and life-history, the less we are inclined even to expect the discovery of specifics. Disease we know not as an entity, an enemy to be struck down with a club, or to be expelled by a drug, but as a process ; the change of tissues and of fluids, the growth of a microbe, the proliferation of a cell, the secretion of a virus. We can modify the processes, we can lessen their virulent products, we can fortify against their worst effects ; we can aid the evolution and perhaps guide it to health ; sometimes we can arrest it ; and often we can anticipate it. Thus we know how to ward off many diseases. Cholera, typhoid, small-pox, hydrophobia, are enemies whom we can meet at the gate and forbid their approach. Deaths from either of these preventable diseases are, for the most part, violent deaths, inflicted by the ignorance of the people, the neglect of the sanitary authorities. *Populus vult mori*. In their search for specifics they parley with the enemy and lose their lives. Of influenza we know less than of most other infections ; it is aerial, communicable from person to person, and along the lines of travel. For it, as for scarlet fever, we have only isolation as a preventive, and palliatives as a treatment. Perhaps one day we shall know more ; but there does not seem any likelihood of the discovery of a specific, and judging from numerous analogies it is far from certain that there is in this any ground for reproach. At any rate it comes badly from a public and from a generation which is content to leave Great Britain without even one institute of Preventive medicine, and which is left to an appeal for funds from a Lister and a Roscoe to found such an institute—in which lies a chief hope for further life-saving and the advance of preventive and curative knowledge—while millions are lavished on weapons of destruction, or the more obvious means of charitable relief to physical suffering, and finally on the purchase of fraudulent “specifics.”—*British Medical Journal*.

*The Therapeutic Gazette* has undergone an editorial change. Dr. Robert Meade Smith has retired. Dr. Hobart Amory Hare has become editor-in-chief ; Dr. George E. de Schweinitz, editor of ophthalmic and



aural therapeutics, and Dr. Edward Martin, editor of surgical and genito-urinary therapeutics.

*Medical Legislation in the United States in 1891.*—Among the laws of interest to the medical profession passed during the year, we may mention the following: The Immigration law passed by the last Congress requires medical inspection of all immigrants on arrival. All idiots, insane persons, paupers, or persons likely to become public charges, or persons suffering from loathsome, dangerous, or contagious diseases, as well as felons and assisted persons, are to be sent back to the country from which they came.

Congress has also passed an act establishing five stations for the inspection of meat that is destined for support. The principal duty of the inspector appears to be to search for trichinæ.

The State of Alabama has passed a law requiring all physicians who are not graduates of reputable medical colleges, to obtain certificates of qualification from a board of medical examiners.

The State of Arkansas has passed a law allowing the board of medical examiners, after trial, to revoke the license of a physician to practice, if convicted of unprofessional conduct.

The State of Nebraska has passed a law requiring a certificate from the State board of health and graduation from a legally chartered medical school or college, before a license to practice is allowed.

Among the states in which bills regulating the practice of Medicine have been defeated, may be mentioned Massachusetts, Rhode Island and Pennsylvania. The latter State has already a registry law. Massachusetts is now one of the five States only in which the practice of medicine is unrestricted by law.

The New York State medical practice law, passed during the preceding year, went into effect. It provides that no one shall practice medicine in the State without previously obtaining a license from the State Board of Medical Examiners.

In Massachusetts a law was passed requiring the detention of inmates of State penal and charitable institutions who are suffering from syphilis in a contagious form until the disease is no longer contagious.

The State of Maine requires all persons having charge of infants with sore eyes to report the fact to physicians. It has also passed a law to provide for the registration of vital statistics.

In Massachusetts an attempt was made to restrict the use of arsenic in the manufacture of various articles, but it resulted merely in prohibiting its use in children's toys and confectionery.

The United States Supreme Court has decided that a court may not order a medical examination of a person in a civil case, against his or her will.

The Municipal Court of Boston has decided that a druggist may sell cigars on Sunday, as a drug to be used for the cure of catarrh.  
—*Boston Medical and Surgical Journal*.

*Laboratory of Hygiene, University of Pennsylvania.*—It is announced that the laboratory of hygiene of the University of Pennsylvania will be opened for practical work on February 1, 1892. The building contains chemic and bacteriologic laboratories, special rooms for investigations upon air, water, food, soil, clothing, etc., workshops and photo-micrographic rooms, and special arrangements for demonstrating the principles and practice of heating and ventilation, house-drainage, etc. The work of the laboratory will be under the charge of the director, Dr. John S. Billings. Dr. A. C. Abbott has been appointed first assistant, and Dr. Albert A. Ghriskey, assistant in bacteriology. A course in practical hygiene and an elementary course in bacteriology, each of eight weeks, have been established.

*Medical Prizes Offered.*—The medical faculty of the University of Tübingen has offered two prizes for the best essays on each of the following subjects: "A Critical Resume of Recent Theories of Glaucoma, Preferably Based upon Original Experiments upon the Eyes of Animals;" "The influences, if any, Exerted by Antipyrin, Antifebrin, and Phenacetin upon the Conditions that follow the Excessive use of Alcohol."

*Alvarenga Prize of the College of Physicians of Philadelphia.*—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about \$180 will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the college on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

CHARLES W. DULLES, Secretary,



## REVIEWS AND BOOK NOTICES.

SYPHILIS. VOL. 1. IN ANCIENT AND PRE-HISTORIC TIMES. By Buret. Physicians' and Students' Ready Reference Series. F. A. Davis, Philadelphia, 1891. \$1.25.

Starting from hoary antiquity, the author has traced step by step the history of this dread scourge.

The earliest proofs that have come down to us of the great age of this disease are found in bones of pre-historic peoples. Some of these bones contain the lesions of syphilis so typical that it is impossible to mistake them. Advancing then to a consideration of the disease, as described in the oldest medical literature extant, that of the Chinese, he quotes from a very ancient medical document, written in China 4530 years, which describes the disease in a succinct manner, and which shows that the difference between syphilis and gonorrhœa was at that early date clearly recognized.

Separate chapters are then devoted to legendary accounts, inferences and deductions, some of which seem like absolute proof, of the disease among the Japanese; the Egyptians, at the time of the Pharaohs; among the ancient Assyrians and Babylonians; among the Hebrews in biblical times; among the Hindoos; among the Greeks; and finally in Rome, under the Cæsars.

The chronology of syphilis is, in this first volume, brought down to the time of Christianity; the succeeding two volumes will carry it down to this generation.

Although the author starts out with the intention of proving the great antiquity of syphilis, yet he has presented his conclusions in a fair and unbiased manner. The work shows the result of patient and painstaking research, and Dr. Buret is to be congratulated upon the result that he has achieved in clearing up doubtful points in a much vexed question, and especially in handling the subject without salaciousness and without sensationalism.

H. V. R.

CONSUMPTION—HOW TO PREVENT IT, AND HOW TO LIVE WITH IT.

Its nature, its causes, its prevention, and the mode of life, climate, exercise, food, clothing necessary for its cure. By N. S. Davis, Jr., A. M., M. D. F. A. Davis, Philadelphia. Seventy-five cents,

This brochure is written for those who either have consumption themselves, or are obliged to live constantly in contact with phthisical people. Its principles and precepts are described in non-technical

language, and are such as can be readily understood and applied by laymen.

It is an excellent book, filled with sound advice and guidance for intelligent consumptives.

ESSENTIALS OF MEDICAL ELECTRICITY. By D. D. Stewart, M. D., and E. S. Lawrence, M. D., with sixty-five illustrations. W. B. Saunders, Philadelphia, 1892. One dollar.

This latest addition to the series of Saunder's Question Compend, is fully as valuable as its predecessors.

The aim of the author has been to embrace in this small volume all the essential elements of medical electricity. This they have admirably succeeded in doing. But while the descriptions are necessarily brief, yet they are clear and easily understood, and present to the medical student a vast amount of well digested information in a small compass.

THE MODERN TREATMENT OF HIP DISEASE. By C. F. Stillman, M. D. The Physicians'-Leisure Library. George S. Davis, Detroit, Mich. Twenty-five cents.

This convenient little volume forms one, and by no means the least valuable, of a new series designed to supply the practitioners with the latest views of several well-known authorities on various practical points. It is confessedly a compilation, but the opinions quoted are recast in a very concise form and classified in such a natural and logical manner that one can determine almost at a glance the relative value of the methods of treatment proposed.

The term "modern" in the title is justified by the list of authorities referred to, and all necessary aid is furnished by the numerous wood-cuts of apparatus here reproduced. We are especially pleased to note that the author condemns the so-called "physiological method" of Hutchison, where the weight of the diseased limb, swinging clear from the ground while the sound limb is lengthened by a high shoe, is the only traction force.

We cordially recommend this little work as a clear safe guide in the management of a very trying class of cases. S. R. M.

*Pamphlets Received.*—The editor acknowledges with thanks the following pamphlets: The Technique of Cerebral Surgery, by G. Wiley Broome, M. D.; A Clinical Report of Operative Surgery in the service of Dr. William T. Bull, by William B. Coley, M. D.; A Statistical note on 234 cases of Paresis, with special reference to its etiology,



by H. W. Baanister, M. D.; Considerations upon Medical Hæmorrhage Surgically Treated with a Successful Case, by a New Technique of Saline Infusion for Severe Hæmorrhage, by Robert H. M. Dawbarn, M. D.; Abdominal and Pelvic Surgery, by William H. Wathen, M. D.; Stricture of the Rectum, by Charles B. Kelsey, M. D.; Tubercular Peritonitis, by A. Vanderveer, M. D.; Report of Cases of Cholecystotomy, with Special Reference to the Treatment of Calculus Lodging in the Common Duct, by A. Vanderveer, M. D.; Retro-peritoneal Tumors, Their Anatomical Relations, Pathology, Diagnosis and Treatment, with a Report of Cases, by Albert Vanderveer, M. D.; Seventh Annual Report of the New York Post-Graduate Hospital and the Babies' Wards; Impure Air and Ventilation of Private Dwellings, by Howard Van Rensselaer, M. D.; The Treatment of Tuberculosis with Guaiacol, by Prof. Dr. Max Schueller, Berlin, Germany.

*Book Announcements.*—J. B. Flint & Co., New York, have in press, and ready early in the current year the following books: A complete system of "GYNAECOLOGY AND OBSTETRICS," with 869 new illustrations based upon translations from the French of Pozzi, Auvar, and others, revised by Chas. Jewett, M. D., bound in leather or half morocco, \$8.

*Flint's condensed complete "Encyclopædia of Medicine and Surgery;"* arranged upon a new system, and embodying the various methods of treatment employed by eminent practitioners. The most valuable and complete work of this nature ever published. The result of a year's labor of a large corps of writers; leather or half morocco, two volumes, \$8 per volume. The above works sold by subscription.

Also in press, ready March 1st, the "Electro-Therapeutics of Gynaecology," by Augustin H. Goelet, M. D.; cloth bound, \$2.50.

Important new medical works now in preparation, ready for delivery about June 1, 1892. W. B. SAUNDERS, Publisher, 913 Walnut Street, Philadelphia, Pa.

AN AMERICAN TEXT-BOOK OF SURGERY. By Professors Keen, White, Burnett, Conner, Dennis, Park, Nancrede, Pilcher, Senn, Shepherd, Stimson, Thompson and Warren. Forming one handsome royal octavo volume of about 1200 pages (10x7 inches), profusely illustrated with wood-cuts in text, and chromo-lithographic plates. Many of them engraved from original photographs and drawings, furnished by the authors. Price, cloth, \$7; sheep, \$8.

AN AMERICAN TEXT-BOOK ON THE THEORY AND PRACTICE OF MEDICINE, ACCORDING TO AMERICAN TEACHERS, edited by William Pepper, M. D., LL. D., provost of the University of Pennsylvania. To be completed in two handsome royal octavo volumes of about 1000 pages each, with illustrations to elucidate the text wherever necessary. Price per volume, Cloth, \$5; Sheep, \$6; Half Russia, \$7.

---

## OBITUARY.

DR. DAVID FLEISCHMAN. At Albany, N. Y., on January 30, 1892, Dr. David Fleischman passed away. He was born March 12, 1859. He graduated at Yale University in 1879 with honors and prizes. He then entered the Albany Medical College, from which he graduated in 1881.

Determined to follow the specialties of the throat and nose, he studied in New York under Jarvis and Bosworth, and also at the New York Post-graduate School.

Having completed his extra work there, he returned to his native city in 1883, and has since been in active practice in his specialties, Laregugology and Rhinology.

During the few years of his practice here, he was honored by the entire profession in this city and section of the country, and was much respected by his patients.

Last year he contracted a tubercular pleurisy, and some time later on the advice of his colleagues he went to Colorado in search of health.

Failing in this hope, he returned home much more broken in health, and the disease extending into the meninges proved fatal.

### THE LATE DR. DAVID FLEISCHMAN.

At a meeting of the Medical Society, of the county of Albany, held February 1, 1892, the following resolutions were unanimously adopted:

RESOLVED, That by this mournful yet righteous Providence, we are deprived of one of our worthy members, studious, unobtrusive, faithful and competent in his professional relations; gentle, kind and agreeable socially; honored in all his walks of life, we thus suffer no common loss.

RESOLVED, That we extend our sincere condolence and sympathy to his stricken wife and family.

RESOLVED, That a copy of our action herein be entered upon the minutes of the society and also sent to his family.

February 1, 1892.

Signed:

A. VANDERVEER,  
J. H. BLATNER,  
L. E. BLAIR,

Committee.

G. E. LOCHNER, Secretary.



# THE Albany Medical Annals

---

VOL. XIII.

MARCH, 1892.

No. 3.

---

## THE PURIFICATION OF OUR DRINKING SUPPLIES BY INTERMITTENT FILTRATION.\*

BY HOWARD VAN RENSSELAER, PH. B., M. D.

The question of our water supply here in Albany is so vitally important to all of us, that every member of the community must be interested in the speedy and safe solution of the problem. Much has been said and written during the past few years of the poor condition of our drinking water, and many plans have been advocated, discussed, investigation and abandoned, for obtaining water from other sources than our present supply, i. e., the Hudson river. Now that the latest plan of using the Normanskill creek has been adversely reported by the common council, it seems sure, that the Hudson is to be our main supply for some time at least to come. It was thought timely, therefore, to turn our attention this evening to, and to precipitate debate upon, the difficult problem of purifying the supply which we are compelled to use.

Of the several plans at our disposal the first method to which your attention is directed is one which is of very recent date, is very little known, and involves principles which have just been discovered, and problems which have not yet entirely been elucidated. This means of purifying water is called the *method by intermittent filtration*, and the facts, figures and deductions which are to be presented are based on the recent scientific, carefully-planned, and conscientiously executed experiments undertaken by the State Board of Health of Massachusetts at their experiment station at Lawrence.

---

\*Read before the Medical Society of the County of Albany, at a meeting held February, 1892.

The way this problem came to be attacked arose in the urgent need of some simple and safe plan of purifying the sewage of towns, which were accustomed to drain their effluvia into and pollute the neighboring streams, and which waters were lower down in their course, drawn upon as drinking supplies for the adjacent towns and villages on their banks.

Experiments have been undertaken during the past few years in England, France, and Germany, and to a very limited extent also in this country, with the two-fold purpose of utilizing the sewage as a fertilizing material for growing crops, and also to determine the value and amount of purification of the effluvia through removal of the organic matter, that resulted.

Soils were underdrained, and the water collected from the effluent was examined both chemically and biologically, and was found to be nearly as pure as the average drinking supply in the neighborhood. A number of factors, however, were found to modify both the quantity and quality of the effluent, such as the rain-fall, the quantity of sewage applied, the mode of its application, the nature of the soil, and the character of the growing crops. It was soon found that many soils were capable, under proper conditions, of absorbing and purifying sewage in greater quantity than the crops could stand. This led to investigations, and the plan of applying small quantities of fluids to a soil periodically instead of continuously became known as the *method of purification by intermittent filtration*.

To solve the problems of the maximum purifying capacity of different sands that are found in our valleys, the Massachusetts State Board of Health in 1887 began its experiments. For its purpose a number of filtering tanks were used, each arranged as follows: A tank with an average diameter of seventeen feet, and a depth of six feet, is set with the bottom slightly sloping towards a storing tank. At the bottom of the tank an underdrain fifteen feet in length, of horse-shoe section, about two square inches in area, is set with the open part downwards, and half an inch above the bottom, resting on blocks. The floor is covered with one layer of coarse gravel stones, one inch by two, and this by another of smaller size, on which follow layer after layer of gravel, decreasing in size



to one-eighth of an inch in diameter, and making a thickness of three and a half inches. This fine gravel is covered with very coarse mortar sand three and a half inches deep; above this substratum, which is the same for all the tanks, the filters are filled with different materials, of which we will confine ourselves to two, a fine and a coarse sand, which are the most applicable for our purpose. These sands are similar in size and appearance to the two specimens here presented, one of which was taken from the sand plains, and the other from Tivoli Hollow, both within our city limits.

As the water we drink here at Albany is simply a much diluted sewage, it is advisable to understand what the composition of sewage is. Roughly computed, a fairly strong sewage is composed of 988 parts of water, one part of mineral, and one part of animal and vegetable matter in every thousand parts. If we could remove the mineral and organic [i. e. the animal and vegetable matter] we should have an absolutely pure water; but as the only things which are objectionable are the organic substances, if we can eliminate them, we may then consider the water as pure and safe for drinking purposes.

This organic matter is partly in suspension, and can be removed by a very fine strainer, and partly in solution, and will pass unchanged through the finest pores.

Organic matter is composed principally of complicated combinations of carbon, nitrogen and hydrogen. When such matter decomposes, the carbon for the most part combines with oxygen forming carbonic oxide and passes off at a gas, and most of the nitrogen unites with hydrogen forming ammonia.

In our water as the organic substances decay, part of the carbonic acid escapes, and part goes into solution in the water, the ammonia remains in solution and is partly free and partly in combination with albuminous substances. In sewage there is usually more free than albuminoid ammonia, and as decay proceeds more and more of the albuminoid becomes converted into free ammonia.

In the effluents after water has been intermittently filtered we find the free ammonia has become changed, part of it has entirely disappeared, perhaps escaped as free

nitrogen, but the most of it has become oxidized first into nitrous and nitric acid, and then these acids have combined with potash or soda or lime or other base in the sewage, forming nitrites or nitrates with these bases. So that during the process of intermittent filtration the organic and free ammonia have disappeared from the filtrate, and have become converted into the inorganic nitrates. The albuminoid ammonia much reduced in amount forms, with the exception of the micro-organisms later to be discussed, the only organic impurity.

This conversion of ammonia into nitrates called "Nitrification" is a most important process in the purification of sewage, and was thought at first to be a simple chemical oxidation occurring in the presence of air. Further experiments, however, showed that unless another factor was present, namely, micro-organisms, that these changes did not occur. This was proved by filtering sterilized sewage through sterilized sand, the other conditions being the same. Analysis of the resulting effluent showed as much soluble organic matter as the original contained, and it was only when unsterilized fluids were passed through the filters for a time sufficient for the bacteria present in them to grow, that the purifying changes became manifest.

The value of a filter is shown by the smallness of the quantity of ammonia in the effluent and the greatness of the nitrates. The closer the nitrogen of the nitrates in the effluent approximates the total nitrogen of the sewage, the more thoroughly the organic matter has been oxidized, and its objectionable part been converted into an unobjectionable mineral matter.

The conditions necessary for the purification by nitrification are: Oxygen, organic matter, moisture, an alkali, micro-organisms, and a temperature favorable to the growth of plant life. Where these conditions are present large quantities of organic matter can be converted into inorganic and mineral matter.

Our problem then is to remove not only the suspended organic matter, but also to destroy the albuminous substances in solution. This is more than the ordinary filters to which we are accustomed will do, because they sift out the sus-



pended matter only, and allow all soluble substances to pass through.

Let us suppose first that to a sand filter, such as has been described, as much sewage be continuously applied as will pass through it. What will happen? At first the suspended matter will be mechanically held back in the filter, and the effluent will be somewhat purer than the sewage applied. But after a time the filter becomes saturated with the impurities, can take up no more, and then the applied water and effluent are equally foul. That is what takes place in continuous filtration without the presence of air, when no means are employed to cleanse the sand.

Now with the same filter and sewage, let us vary the manner of application. Instead of applying the sewage continuously, let us flood the surface of the filter, say an inch in depth once to-day, and repeat this daily; and then mark the change, if any, in the composition of the effluent. The inch of fluid applied quickly settles down through the sand, the bottom particles going down about nine inches, while the top-most are just below the surface. Analysis of the contents of these nine inches then is as follows: Two-thirds sand, one-ninth water and two-ninths air. The one inch of water, now distributed through nine inches of sand, is held in thin films between the particles of sand in intimate contact with twice its volume of air.

The following day the applied inch of sewage forces the water and air already in the sand nine inches further down, and occupies the place previously held by it. The same thing happens on each successive day, until at the end of about a week the first applied sewage drips out at the bottom. During all this time this very thin film of water moving over the sand has been bathed with an abundance of air.

The proportion of air, sand and fluid just cited, applies to a coarse, even grained sand. Where a very coarse sand or fine gravel is employed, the water will run through much more quickly, and where a very fine sand is used, it percolates slowly, and a much smaller quantity of fluid must be poured on, or the lower layers of the sand become saturated with water.

Previous to the investigations at Lawrence, very little was

known of the conditions most favorable for the purification of sewage by sand or soil, or the maximum quantity that could be applied, or the intermissions required for producing the purest effluent. Of the great number of experiments undertaken with all kinds of soil and sand, and with varying quantities of water, we will confine ourselves to these which have proved most useful, and which are most applicable to our needs.

Sewage was applied to one of the tanks at the beginning of an unusually severe winter, so that the capacity of the filter was thoroughly tested from the very first. During the cold months of January, February and March, the nitrates were but little greater than those of the sewage, i. e., no nitrification took place within the tank. The ammonias averaged 32 per cent. of those of the sewage. This high proportion of ammonias was due probably to the fact that the upper layers of the sand being frozen, the sewage flowed rapidly through the tank in small areas. As it was, two-thirds of the ammonias were this winter removed by this open sand, with considerable ice in the filter. Although during the winter months no nitrification was going on, yet an important step in the process of purification was taking place. This was the partial conversion of albuminoid to free ammonia, i. e., an oxidation or burning of the albuminoid ammonia into carbonic acid, free ammonia and probably nitrogen gas. This change is as far as it goes a complete destruction of organic matter, although the free ammonia may not be further oxidized into nitric acid and nitrates. Nor is the quantity of the organic matter converted as great as where nitrification exists. It is, however, a partial purification, and the conditions of intermittent filtration are those most favorable to this process of cleansing.

During the second winter the results were much more satisfactory than in the first season. Nitrification which occurred during the summer and autumn now continued, and the sewage applied at 35 degrees F., continued to be well nitrified. From this we can deduce that if the filters be protected from snow they are capable of purifying water efficiently throughout the year.

With the advent of spring a marked change occurred. As soon as the ice melted and the temperature of the effluent rose



to 39 degrees F., nitrification began, and with a rising temperature rapidly increased. The nitrates of the crude sewage averaged less than 0.01 part in 100,000 parts. When nitrification began the nitrates gradually rose till the first week in May, when they reached 3.00 parts, i. e., 300 times the amount in the applied sewage. At that time the temperature of the effluent was 50 degrees F., they then gradually fell. With the exception of this increased activity during the rapidly growing months of April till June, the nitrates in the effluent rise and fall with the rise and fall of the ammonias in the sewage.

The nitrogen which becomes stored in the tank is probably simply a straining out of the sewage of solid particles of organic matter. When nitrification became very active in the spring, it was evident that more nitrogen was coming from the tank than was being applied, making the conclusion necessary that the nitrogenous matter in the filter was being removed. In general nitrification began first and burned most fiercely where the most organic matter had been stored in the tank, and filters started at different seasons of the year, showed that nitrification did not become active until organic matter sufficient to be burned had been stored.

The amount stored in the tank the first year was 26 per cent.; in the second year 8 per cent. The increase was interrupted and the quantity decreased during the period of most active nitrification in the spring. Analysis of the sand of the filter showed that the increase of nitrogen was in the upper foot of the tank; beneath this, during the second year there has been continually less nitrogen than at the end of the first year. In the upper inch of the sand at the end of the second twelve months there was five times as much nitrogen as at the end of the first year, and that below the upper inch there was less nitrogen now stored than at the end of the first season. Examining the effect of the spring nitrification in removing stored nitrogen, we find that in the upper inch it was not reduced, but in every inch below it was removed; the percentage of cleansing increasing with the distance from the top. Hence we may conclude that nitrification is more complete in the lower than in the upper layers of sand. The question then arises whether this material will

not thoroughly cleanse itself of nitrogenous matter, and continue indefinitely an efficient filter, if the upper layer is plowed under once a year.

During the filtration of sewage for these two years, the whole amount has been filtered without removing any sediment, nor any cleansing of the sand, except such cleaning as the process of oxidation or of nitrification produces. This cleansing process has the effect of burning up the organic matter of the sewage, both that which is deposited on the surface, and that which permeates the sand. When the water was applied it disappeared nearly as fast as it was poured on, and the next morning a handful of sand from the dry surface did not have any odor.

Experiments showed that the value of a filter depends on following a definite regime, and requiring every part of it to accomplish its work at regular intervals. The filter thus acts like a living delicate organization, capable of performing what is expected of it, if it is not over-worked; but any change from the normal disarranges the mechanism, and may require weeks before it can adapt itself to the new requirements.

The presence of particular organisms are necessary to aid the work; and with suitable food and proper conditions, they must have time to accumulate before they can perform the best purification with the quantity of sewage received. Changes in quantity or mode of application of the water disorganize the working colony and hinder their best efforts, until they can slowly accommodate themselves to the new conditions.

Of the micro-organisms found in the sewage and effluent, we must distinguish two general classes. 1. The *microscopical organisms*, those which do not have to be cultivated for identification on special media, which are easily studied under the microscope, and which may be plants or animals. 2. The *bacterial organisms*, those which require special method of culture, are studied with difficulty under the microscope, are much more minute than the first class, and consist entirely of plants. .

Among the first class, the microscopical organisms, may be mentioned yeast fungi, diatoms and algæ, among the plants; and rhizopods, infusoria, rotifiers, etc., among the



animals. Of these the yeast cells are the most abundant, averaging 20,000 to the gallon. Even with yeast, the numbers are insignificant as compared with the second class, the bacterial organisms. These are present in enormous quantities, the average number of 128 analyses of sewage being 708,000 per cubic centimeter.

The question at once arises, what is the fate of the microscopical organisms and bacteria that are applied in the sewage? Are they destroyed in the filter, or do they pass through? If they survive the passage, the filter, although it may convert all the nitrogenous organic matter into simple inorganic salts, is practically worthless; for the danger lies not in the ammonia compounds but in pathogenic bacteria. We will consider first the microscopical organisms, and will trace the yeast fungus, as it is probably typical. Sewage contains large quantities of these germs, and microscopical examination of the surface sand in the tank shows abundant living cells of the yeast fungus. A few inches lower no cells could be detected, and, between the two, they were found dead and partially disintegrated. In the effluent no evidence of this organism has been found. Algæ, living infusoria, etc., are also present on the top of the tank, where they are easily recognized; a few inches below the surface, however, no such organisms are ordinarily recognized. Normally they appear to perish in the tank. There are, however, some forms which are found both in the sewage and effluent, but they probably increase in the underdrains themselves.

To determine if the underdrains and gravel contained more micro-organisms than the effluent flowing through them, ten gallons of sterilized water was forced back into the underdrains and allowed to run out rapidly. The number of organisms in samples of 200 c. c. were about fifty for the first two washings, and from three to seven for the third and fourth washings. As the water forced into the underdrains contained no living forms, and as when rapidly flowing out it bore considerable numbers at first, and when repeatedly washed the numbers very rapidly decreased, it indicates that the organisms grow and increase in the underdrains, but does not prove that an exceedingly small percentage of some of the kinds applied with the sewage

may not come through. It may be that the spores or eggs of some of the few organisms found in the effluent are able to survive the passage of the sand and develop in the underdrains, when it is impossible for the mature organic beings to pass through, but as the actual number of microscopic forms found in the effluent is much smaller than in ordinary drinking waters, it is evident that the conditions met with in the filter are very unfavorable for the passage and development of such germs.

The second class of organisms, the bacteria, are found everywhere; they are present in enormous quantities in sewage, to a much less extent in all waters, and also in the air. Bacteria are, according to their form, divided into two great classes; minute spherical bodies called micrococci, and the elongated rodlike bacteria, which have been named bacilli. It is worthy of remark that cocci rarely occur in sewage or effluents, which confirms the statement made some time ago by P. F. Frankland, that cocci usually predominate in the air, while bacilli are the prevailing forms in water.

Immediately after sewage was applied for the first time to any filter very large numbers of bacteria came through; then after sewage had taken full possession of the tank they rapidly decreased in the effluent, and after nitrification had once set in they decreased to a small fraction of one per cent of the number in the sewage. The average number of bacteria that were found in the effluent for the past year and a half was about two thousand per c. c. and for three months of the time, when nitrification was most active, the number averaged but eighty, while at the same time the quantity applied in the sewage was more than a million.

The number of bacteria in the effluent in the tanks of coarse sand varied much from day to day, and also from hour to hour, depending on the rate of flow. It was found that an hour after sewage had been applied to the filter the water at the outlet would increase for an hour or two and then decrease. Samples of the effluent were collected just before the application of sewage, and continued at intervals for some hours after. It was shown that not long after the application of the water that the number of bacteria discharge per unit volume, is many times greater



than at any other time. And as this coincides in a general way with the period of rapid flow, it follows that a majority of all the bacteria discharged during the day escape in a comparatively limited time, and a sample taken at this time differs widely from one taken before the maximum flow, or long after.

Experiments were instituted to determine whether the increased numbers in the effluent present during the greater flow, were due to the washing off of bacteria that had accumulated or grown in the underdrains, or whether they were coming through the sand in greater numbers at that time.

To determine this, when the water was slowly trickling through the tank the outlet pipe was closed for several hours. The water was then drawn off with varying velocities. When it was drawn slowly, it contained very few bacteria, but when it flowed at a rapid rate the number greatly increased, showing that some of the germs were washed from the underdrains during the rapid flow; but this increase was not as great as when the effluent was coming rapidly through the sand at the time of its maximum volume. When the water was passing through the tank at its great speed, the number of bacteria had increased from about 150 to 10,000. The increased flow from the underdrains, on the other hand, by damming it and allowing it to flow out rapidly, raised the number by a few hundred only. From this it follows that the augmentation is due to more bacteria coming down through the sand with the rapid flow, rather than a washing off of individuals from the undergrains and gravel. The reason seems to be that with coarse sands, the air space, after the filter has drained for a day, is about twice that occupied by water. When sewage is now applied in large quantity, the air passages being quite large, it flows into them rapidly, and passes some of the water held in the more minute interstices; and a small percentage of this sewage reaches the outlet within an hour or two, carrying with it a considerable fraction of the contained bacteria.

In order to determine whether, under the ordinary conditions of intermittent filtration, bacteria pass through the filter, the following experiment was tried. A species of bacteria very easy to recognize called *Bacillus Prodigiosus*, which had never been observed in the sewage or effluents and

is not native to this country, was chosen. This germ was carefully cultivated and then added in enormous quantities to the charge of sewage. In the coarser sands an extremely small number came through, which showed that most of those applied perished in the filter. Nor were any found at any later date, although hundreds of examinations were made of the effluent and the sand in the tank. The conclusion is inevitable that it speedily died out. When applied to somewhat finer sand filters, none of the germs came through. While, however, a foreign species of bacteria, if applied in vast numbers to coarse sand tanks, may escape in the effluent in exceedingly diminished numbers, yet there is no direct evidence that an indigenous species may not survive the passage of the tanks. The direct evidence thus far obtained shows that if any species does come through, it is only in vastly diminished numbers.

Besides the bacteria found in the sands in the filters there is a considerable quantity of brown flakes of amorphous matter called mycoderma, or zooglœa. This zooglœa is, doubtless, composed of groups or families of living bacteria, the cells of which have been converted into an intercellular substance of a gelatinous character. They are produced, probably, by the swelling of the outer part of the cell-walls of the bacteria, and are believed to be closely related to cellulose in composition. They are therefore comparatively indestructible. It may be owing to their presence that a continuous filter clogs so rapidly with sewage, while their destruction by the oxidations of intermittent filtration is probably an essential condition of the successful operation of the latter. This zooglœa is constant and characteristic in all the tanks. It is the only organic substance occurring from the top to the bottom of the filters. It cannot be regarded as an accidental accumulation of debris, as it is uniform in character, and is attached to the sand-grains as if it had been formed there, rather than if it had been accidentally detained. It is found clinging to the sand in large quantities, sometimes nearly every grain being fringed with it. It is believed that the bacteria in this stage are alive and active, though they do not grow on gelatine plates; it is also thought that a sand filter is ineffective until this zooglœa has begun to form. The work done by these



masses in the mature filters is very great, and disproportionate to the alterations in the zooglœa themselves, just as in the fermentation by yeast cells, a small amount of yeast is capable of producing great chemical changes.

In examining biologically the different layers of sand in a tank, it was found that the greatest number of bacteria were near the surface and decreased towards the bottom. The species that liquify gelatine were for the most part near the top, and seemed to die before reaching the lower layers of the filter.

From examinations of sand at different times it seems probable that large numbers of bacteria are stored in the tank, although at the same time but few may be found in the effluent, and indicates that the bacteria distributed throughout the sand are not moving from top to bottom with the liquids, but are adapted to live there, and are permanently attached to the sand, and are only occasionally dislodged by the passing fluid. This suggestion is supported by the fact that once, when the bacteria distributed throughout the sand were nearly all of one species, none of this particular kind were found in the effluent.

Experiments have shown that with these coarse sands that it is mechanically possible for large percentages of bacteria to pass through the filter alive, so that when we find that during intermittent filtration the number passing out is very far below these percentages, we must conclude that some other conditions besides the mechanical one is inimical to their survival.

We have seen that when sewage was first applied to a tank, and meeting in the sand abundance of oxygen, and carrying down oxygen with it, and there being at that time, no destruction of organic matter, that from 5 to 40 per cent of the bacteria passed out alive. But just as soon as sewage permeated the whole tank, and the oxygen taken in for the most part combined with the carbon of the organic matter, to form carbon dioxide, there was only sufficient oxygen remaining to support a little over one per cent of the bacteria during their passage, and finally that after nitrification had set in that the number fell much below one per cent.

From this we may conclude that after the filter is mature

and nitrification is established, the conditions present are extremely unfavorable to the life of organisms, for although there appears to be an abundance of food, the bacteria do not decrease with the decrease of the sum of ammonias, but with the completeness of nitrification. When nitric acid and nitrates were being formed by the burning up of the nitrogen in the organic matter, and when this oxidation was most complete the number of bacteria were the fewest. So that their destruction may be due partly to the process of oxidation depriving them of oxygen, and also perhaps their own oxidation, i. e., their being burned.

In one of the tanks, city water was filtered for two years at the rate of 300,000 gallons per day. Analysis of this water showed that but five per cent. of the total nitrogen was in suspension and could be strained out by the finest filter-paper, and the remaining ninety-five per cent was in solution. During the first three months of filtration sixty-six per cent. of the nitrogen in solution was retained by the filtering material. Just how the sand retains the soluble nitrogenous matter is not clear, but the fact has been shown in all the filtering tanks. When nitrification commenced more nitrogen came away in the effluent than was applied, nearly equalling the amount stored during the previous three months. At the end of two months all the stored nitrogen was burned up, and there being but little left to burn, nitrification ceased for three months, when sufficient matter having again accumulated, it lighted up, and continued throughout the second year. At the end of this time there was no more organic matter stored in the tank, than there was at the beginning, and after being used continuously for two years, without any disturbance of material, or cleaning of the surface, except that of the cleansing by nitrification, that the filter is in better condition for filtration than at the commencement, and shows that it may be continued indefinitely. The filtered water compares favorably with excellent unpolluted ground water. Its color is entirely removed by filtration; and the effluent is clear, bright and colorless.

Of the microscopic organisms, in four examinations only out of twenty were any individuals found, and these species live and grow in places like the underdrains, and probably



those detected did not come through the tank. So that we can conclude that the microscopical organisms are entirely removed by the filter.

As to the bacteria, the number found in the effluent varied but little, but was smaller the second year than the first, averaging about eight per cubic centimeter. With this small number the conditions for their successful passage through the filter or growth in the underdrains is unfavorable. To prove that bacteria do grow in the underdrains, the pipe was washed out with a sterilized sponge. At this time the average number in the effluent was six per cubic centimeter. When the pipe was wiped a foot at a time, and water squeezed from the sponge, the average number varied from 212 per c. c. for the first foot, to 5,880 to the sixth, and averaging for each foot 1,570. These numbers growing in the pipe and underdrains are sufficient to supply the small numbers found in the effluent.

To review briefly what we have discussed, we have seen that with coarse sands the effluent is colorless and generally clear, and contains about one-thousandth of the number of bacteria applied, that from 97 to 99 per cent. of the organic matter is removed, but that an hour or so after applying fluids there is liable to be a temporary decrease in purification and increase in bacteria. That the mechanical separation of part of the organic matter is but an incident, and that the important condition is a slow motion of thin films of water over particles of sand, with sufficient spaces between them, to allow continual contact of air with the films of fluid. That the microscopical organisms normally perish in the upper two inches of sand; and that the presence of bacteria in the upper layers of the tank, where the solid living organic matter is being destroyed, indicates that the disintegration may be the result of fermentation produced by these germs.

A most important feature of intermittent filtration is the nearly complete removal of sewage bacteria in the sand, which shows that the filters not only separate, but also thoroughly disintegrate the greater part of the organisms applied in the water; and that this destruction is most active when nitrification is most complete.

The simplest theory of the action of a filter is, that it is mechanical, that is, that it acts as a strainer. Such a filter, however, soon chokes, unless it is cleansed. An intermittent filter, on the other hand, not only does not choke, but is self-cleansing. The organic matter in solution becomes changed, and the suspended matter accumulates for a short time only; both appear in the effluent no longer as organic material, but as inorganic salts. Mechanical process alone cannot produce

such alterations, and the conditions are such that a mechanical hypothesis can be excluded.

The next simplest theory is the chemical one. That such chemical decompositions do take place is evident, the changes effected resembling the burning by fire. But this theory alone is not sufficient to explain all the facts; and an additional element, micro-organisms, must also be present. So that the chemical hypothesis has given way to one essentially vital, or biological. The important features of intermittent filtration so far established are: "Mature filters give the best results. A distinct regimen is essential to success. Free oxygen is indispensable. Water is best purified when held in thin films between the sand grains. The period of greatest destruction of bacteria corresponds with the time of most active nitrification."

The points in favor of purification of water by intermittent filtration are. No chemical substances need to be added to the water. The filters are self-cleansing and require no care. When once set up there is almost no further expense. They are indestructible. The effluent is far purer, both chemically and biologically than any method by chemical precipitation.

That although this method is not perfect, yet it gives a drinking water purer and safer than by any other process.

---

#### EXPLANATION OF THE PLATE.

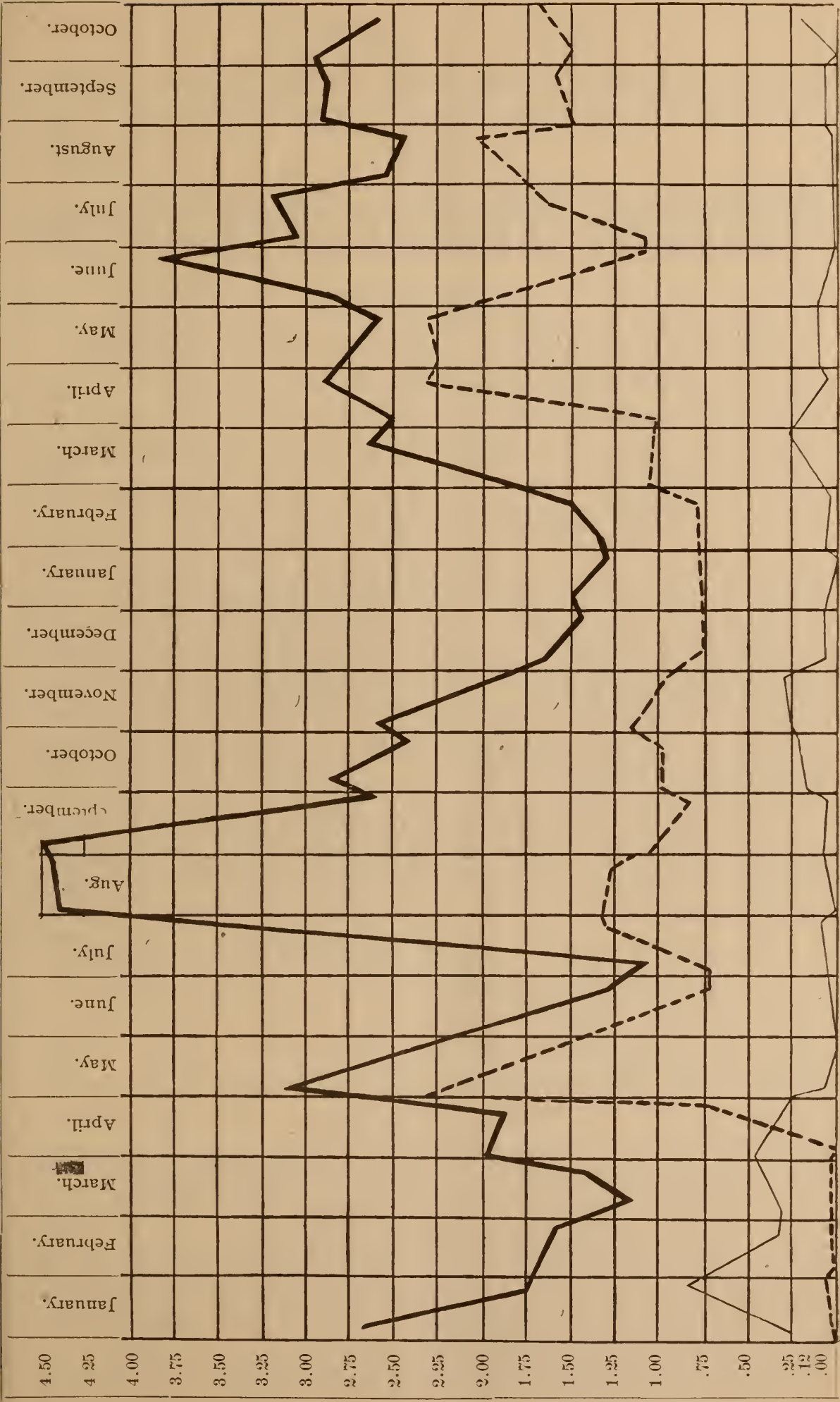
The upper heavy line represents the sum of Ammonias as given in parts per 100.000 of unfiltered sewage.

The dotted line represents the nitrates in the effluent. In crude sewage the nitrates are practically nil, and are not represented in the plate. It will be observed that during the first three winter months, that there was practically no nitrification, the amount of nitrates being but little above zero, and that in April it suddenly lighted up, and burned with great vigor during April and May, and that in the latter part of May and June it rapidly decreased and remained low for a time, and after this, rose and fell in general with the rise and fall of the sum of Ammonias in the crude sewage, until in the following spring nitrification again became more active and continued until the stored nitrogen in the tank was for the most part consumed, when it again followed the fluctuations of the sum of Ammonias.

The lower light line represents the sum of the Ammonias in the effluent. At first before nitrification commenced the Ammonias were comparatively high; with the beginning of the burning process, they at once fell and constantly remained very low, less than one quarter of one part per 100.000 parts.

The plottings are calculated from the diagram of tank 1 in the Report of the State Board of Health of Massachusetts for 1890. Each point represents the average of about eight observations each, from the first half and the last half of every month.





# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—No. 3.      MARCH, 1892.      \$1.00 A YEAR.

---

## THE MEDICAL STUDENTS' BILL.

ALBANY, N. Y., February, 1892.

DEAR DOCTOR:—A bill has just passed the Senate (which is more than likely to pass the Assembly, unless earnest and immediate efforts are made by the members of our profession to defeat the same), which, if it becomes a law, will practically nullify until September 1, 1894, the excellent medical law of 1890.

Such an unfortunate state of affairs would be a crying outrage, as it would indicate a step backward in the fight for medical education and public welfare which it might take years to recover.

The bill in question has a very innocent appearance but it is in fact an effort, which has once before succeeded, to exempt all those from the provisions of the medical law of 1890, who matriculated prior to December 1, 1890. Those students who matriculated at a medical college subsequently to June 4, 1890 (the time of the passage of the original law), *knew* that the law of the State required that they should pass an examination before a State Board of Medical examiners, no matter where they may have graduated, and this proposed law, which, if passed, will exempt almost one thousand additional doctors (to be), from the provisions of chapter 507 of the Laws of 1890, is a species of special and selfish legislation of the most pernicious kind.

There is no valid argument in favor of this bill, and still



through personal solicitation and selfish appeals it has already passed the Senate, and it is in a fair way to reach the Governor.

The law governing the practice of medicine in the state of New York is being copied all over the country; it is said by educators to be one of the fairest and best laws on the statute books of any government in the world; almost daily requests for a copy of this law are received from all quarters of the globe, and its praises have been sounded in congratulatory letters to its projectors by physicians and laymen from far and near. Should such an excellent law, passed after more than twenty years of struggle in legislative halls, be emasculated year after year because of the lethargy of our professional brethren, when those selfishly interested are so energetic and persistent? The answer rests with you and all of us. If you desire to crush out this yearly cry on the part of the students against high medical standards, if you desire to preserve intact the excellent law which it is now sought to amend and practically nullify, write or telegraph your Member of Assembly, and Governor R. P. Flower *at once* (delay is now dangerous), that the entire medical profession, not only of the state but of the country, regardless of creed or pathy, is opposed to Assembly Bill No. 513, that it is special and selfish legislation calculated to benefit the few to the detriment of the many, *and that it should not prevail*. If you value a higher standard in the profession of medicine; if you believe in adding to its dignity and worth, you will *not* put this letter aside until you have lent your aid towards the defeat of this proposed legislation.

Respectfully,

D. B. ST. JOHN ROOSA,

DANIEL LEWIS,

MAURICE J. LEWIS,

*Committee on Legislation representing the Medical  
Society of the State of New York.*

---

### Resolutions of the Albany County Medical Society and the Albany County Homœopathic Medical Society on the Medical Students' Bill.

**A**T the regular meeting of the Albany County Medical Society, held February 23, 1892, in Alumni Hall, Dr. W. G. Nellis introduced the following resolutions, which were adopted:

Whereas, Two measures known respectively as senate bill 145 and assembly bill 513, having for their object the practical nullification of

the excellent medical law passed by the legislature in the year 1890, for a long time to come, and

Whereas, The medical law of 1890 has been announced by educators within and without the profession, as one of the most perfect systems for bringing equitably under state control, the licensing of practitioners of medicines, based upon their competency and,

Whereas, All classes of recognized practitioners of medicine desirous of elevating the standard of medicine and of protecting the public from the yearly influx of incompetent and ill-educated physicians, are united in opposing any change in the present law technically known as chapter 507 of the laws of 1890, therefore be it

Resolved, That we the Albany County Medical Society, representing a membership of over 140 active practitioners of medicine and surgery, earnestly and solemnly protest against any attempt to interfere with the law as it now stands, and therefore petition the legislature and more particularly the representatives from Albany county, to cast their votes and their influence against senate bill 145 and assembly bill 513

Resolved, That a copy of these resolutions be forwarded to the members of assembly from Albany county and to the assembly committee on public health.

---

At a special meeting of the Albany County Homœopathic Medical Society, held February 22, 1890, for the purpose of taking action antagonistic to the passage of the so-called medical students' bill, the discussion thereon elicited unanimous expressions of disapproval. The trend of the remarks may be summarized as follows:

*First.—The injustice of the measure.* The bill of last year, exempting students who furnished evidences of having begun the study of medicine *prior* to the passage of the bill, embodied an element of fairness; this bill, however, in exempting whole classes of students who entered upon their medical studies *since* the enactment of the present licensing law, represents no considerations of fairness, equity or expediency.

The present licensing law, that of 1890, has received the unanimous approval of the whole body of the medical profession of this state, the wisest and ablest representatives of all schools harmoniously uniting in rendering the principles of this admirably constructed law practically and thoroughly effective.

No reasonable person will have the hardihood to assume that when these very students shall have become wiser by experiencing the beneficent and conservative provisions of the licensing law, they will not look back on their present misguided and ill-advised efforts with unmingled sorrow and regret.

*Second.—Its Inexpediency.* It is to be considered that the medical students of to-day will naturally endeavor to enter upon practice as easily and as quickly as in former years; they should consider however, that the new and additional tests of scholarship, inaugurated by the licensing law of 1890, have been introduced because, and *only* because the higher and more nearly uniform standards of medical learning, thereby established, are considered reasonable and absolutely



essential, in order to conserve and promote public interests, by securing adequate protection from the dangers of ignorance and misguided empiricism.

They should consider also that these new and added tests are no higher and no more severe than those required of all well-educated medical students in all foreign countries.

How much better, how noble, and worthy of commendation it would be, therefore, for those who are about to assume the responsible duties of well-qualified practitioners to accept, without question, such tests of proficiency as are established by law, and such as are universally recognized by the great body of the medical profession as necessary pre-requisites?

This attempt on the part of medical students to enter upon practice without complying with the requirements of the licensing law, if successful, will not only prove discreditable to themselves, but will antagonize and hinder the development of an improved and completed system, the principles of which are being gradually approved and adopted by nearly all the other states of this union.

For these and other cogent reasons it is very desirable that the students' bill (senate 145, assembly 513), should be opposed by all who hold the promotion of public welfare above selfish and sinister purposes and interests.

In accordance with the forgoing opinions the following resolutions were unanimously adopted.

Whereas, Senate bill 145, and assembly bill 513, is designed to exempt medical students who have begun the study of medicine *since* the enactment of the present licensing law, from its elevating and salutary provisions; and

Whereas, The authors of this bill, being prompted by selfish and ulterior motives *only*, in order to defeat, as far as may be applicable to themselves, the operations of a law, the faithful and impartial administration of which will greatly promote public interests, by securing well-qualified and thoroughly competent practitioners of medicine; and

Whereas, The sinister and short-sighted motives of the promoters of the students' bill are strikingly made manifest by the fact, that they themselves will live to reap the benefits derivable from the operations of the present admirably constructed, eminently practical, and thoroughly effective licensing law, and

Whereas, Efforts put forth with a view of lowering or interfering with approved and well established standards of medical learning, formulated and applied under the provisions of the licensing law of 1890, are unquestionably to be considered alike subversive of public interests, and derogatory to the standing dignity and usefulness of the medical profession; hence should be deprecated, and should meet with decided expressions of disapproval and the most active opposition; therefore,

Resolved, That the members of this society hereby pledge themselves to exert every proper means in their power for arresting the progress and preventing the passage of the so-called medical student bill.

Resolved, That a committee be appointed to give practical effect to the spirit and purposes of the foregoing declaration.

## ANNOTATIONS.

**Gout and Fruit Eating.**—In a recent number of his Archives of Surgery, Mr Jonathan Hutchinson says that he has for many years been in the habit of forbidding fruit to all patients who suffer from the tendency to gout. In every instance in which a total abstainer of long standing has come under his observation for any affection related to gout he has found, on inquiry, that the sufferer was a liberal fruit-eater. Fruits are, by no means, all equally deleterious; cooked fruits, especially, if eaten hot with added sugar, are the most injurious, the addition of cane to grape sugar adds much to the risk of disagreement. Fruit eaten raw and without the addition of sugar would appear to be comparatively safe. Natural instinct and dietetic tastes have already led the way in this direction; few wine-drinkers take fruit or sweets to any extent, and Mr. Hutchinson suggests as a dietetic law that alcohol and fruit sugar should never be taken together, and he believes that the children of those who in former generations have established a gouty constitution may, although themselves water-drinkers, excite active gout by the use of fruit and sugar.—*British Medical Journal*.

**Typhus in New York.**—The recent importation of typhus into New York and its consequent dissemination through various parts of the country call for quite as vigorous measures as the New York Board of Health is carrying out. That these measures will result in keeping the disease within manageable limits we thoroughly believe. Therefore we see no reason for the public to apprehend a wide-spread epidemic. At all events the community should understand that typhus is not a disease that strikes down all sorts and conditions of men indiscriminately, but is confined to those whose surroundings are decidedly insanitary. Moreover, there is no danger of its spreading from one house to another, except through human intercourse; hence, the use of houses in various parts of the city for purposes of isolating patients involves no danger to persons living near such buildings.—*The New York Medical Journal*.

**Lucke's Erysipelas Treatment.**—Winckler. Wiener Medicinische Wochenschrift No. 46. The author has tried the following treatment in twenty-two cases, two of which were on himself. The treatment which is entirely local consists in cleansing the part with an ether swab, and applying oil of turpentine three to five times a day, and a pad of wool bound over the affected area. Temperature rapidly fell, and there was desquamation before the fifth day at latest. It is contraindicated where albuminurea is present, as the turpentine is absorbed and eliminated by the kidneys.



**Antisepsis for the Hands.**—At the John Hopkins' Hospital the use of bichloride of mercury as an antiseptic has declined to a considerable extent in favor of a solution of permanganate of potash in combination with oxalic acid. Dr. Malcolm McLean, at the October meeting of the New York Obstetrical Society, reported on his use of three formulae; given below, for obtaining an aseptic condition of the hands (see New York Journal of Gynecology for December). Having briefly referred to the fact that Dr. W. H. Welch and other members of the Hopkins' surgical staff have come to the conclusion that corrosive sublimate solutions are inferior to those of the permanganate for many antiseptic purposes, the author says that he has found that the scrapings from the finger-nails, etc., taken after an ablution of the hands with any one of the ordinary antiseptic solutions, have developed, under culture in the laboratory, numerous germs. But when solutions of the permanganate of potash and oxalic acid had been used this was not the result, showing the superiority of the latter agents. The staining of the hands by the potash solution has been a serious objection, but he believes that this may be obviated by the use of a solution of hyposulphite of soda, one part to sixteen, and oxalic acid, one part to thirty-two of water. The steps of Dr. McLean's process are: (1), the hands, having been thoroughly cleaned, are to be held for two minutes in a solution of the permanganate of potash, five parts to one hundred, after which the hands should be rinsed in clear water; (2), hold the hands for one minute in a hypophosphite of soda solution, one ounce to the pint; and (3), while this is being done add the oxalic acid solution, one-half ounce to the pint of water. This causes a double chemical combination, whereby an oxalate of sodium and sulphur dioxide are formed, which have powerful decolorizing and disinfecting properties. The permanganate stains are promptly removed from skin and nails; after again rinsing the hands in sterilized water they are ready to come into contact with either an exposed serous or a lacerated mucous membrane. The hands may then be regarded as both surgically and obstetrically clean.—*The Journal of the American Medical Association.*

**New Buildings for Jefferson Medical College of Philadelphia.**—The Board of Trustees and the Faculty of the Jefferson Medical College have just completed the purchase of two large lots on Broad street, giving them a frontage of about 300 feet, and a depth of 150 feet, upon which they will proceed to erect at once a handsome hospital, lecture hall and laboratory building. The estimated cost of the building is \$500,000. The hospital will be built not only as a suitable building in which to take care of the sick and injured, but also will be

provided with a large amphitheatre for clinical lectures. The basement of the hospital building will be given over to the various dispensaries, each of which will be provided with large waiting and physicians rooms as well as rooms for direct teaching of the students. The buildings will be absolutely fireproof and provided with patent sprinklers in case their contents catch fire. By the erection of three commodious buildings the laboratories where delicate work with the microscope or apparatus is carried on, will be separated from the college hall where didactic lectures are given and so will be free from any jarring produced by the movement of large classes. With the hospital on one side affording clinical facilities and the laboratory on the other side of the college for scientific research and training the college will be most favorably situated for giving thorough instruction in medicine. Further than this immediately across the street is the Howard Hospital, on the adjoining corner the Ridgway branch of the Philadelphia Free Library, which contains all the scientific works belonging to this wealthy corporation. The new site is even more favorably situated in regard to the centre of the city than the old one at 10th and Sansom street. The move has been made necessary by the large number of students who are now being instructed in this institution and because the Faculty desire to keep the school and hospital in the foremost rank of medical education in this country. The buildings will be ready for occupancy in the session of '93-'94.

**International Periodical Congress of Gynaecology and Obstetrics.**—The Belgian Society of Gynaecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynaecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19, inclusive, 1892. Three leading questions will be offered for discussion:

1st. Pelvic Suppurations; Referee, Dr. Paul Segond, Paris.

2d. Extra Uterine Pregnancy; Referee, Dr. A. Martin, Berlin.

3d. Placenta Praevia; Referee, Dr. Berry Hart, Edinburg.

Fees: Members participating in first session, 30 Francs. (This will entitle the holder to a copy of the Congress.)

Founders (Life Membership), 300 Francs.

In connection with the Congress there will be an International Exposition of instruments and appliances, pertaining to Gynaecology and Obstetrics.

All communications pertaining to this Congress should be mailed direct to the American Secretary, who will promptly furnish all infor-



mation. All notifications to be forwarded should be received by August 1st.

Everything points to a great success in this Congress. Though notices concerning it have been rather late in this country, already men of celebrity have promised to visit and contribute papers. Among the many foreigners who have written to the Secretary General endorsing and promising support to the undertaking, may be mentioned the following eminent men :

Belgium: De Roubaix, Sacre, Mirriar, Pigeolot, Charles, Sanpart and others. Italy: Porro, La Torre, Mangiazalli, Bozzi, Morisain. Turkey: Chatazian. France: Pean, Demous, Fochier, Auvard, Doleris, Pozzi, Tarnier, Budin, Terrillon, Terrier and others. Holland: Stokvis, Treub, Nyhoff. England: Lawson Tait, Wm. Priestly, Champneys, G. Elder, J. White, Watt Black, Thornton, Doran, Spencer Wells, Bantock and others. Austria: Pawlik, Albert, Chrobuk. Germany: Martin, Leopold, Sanger, Gusserow, Veit, Winckel, Hegar, Kaltenbach, Freund, Heyder and others. Finland: Engstrom, Heinricius, Pippingohold. Switzerland: Reverdin, Vuillet. Russia: Slaviansky. Sweden: Saliss, Westernark. Norway: Statfeldt, Howitz, Meyer.

Further details will be furnished as soon as received.

**Some Clinical Features of Diphtheria and the Treatment by Peroxide of Hydrogen. By George B. Hope, M. D., New York.**—The sentiment, so long divided, with regard to the constitutional or local inception of diphtheria, seems to be now almost universal in the direction of the latter theory. Consequently, in the light of this opinion, it is clear that the rational treatment must rest more on the recognition of some local agent which will surely destroy the specific germ before a full development of the constitutional infection is reached, rather than on any other system of general medication which might be presumed to act more or less as an antidote in combating the septic influences occurring in the course of the disease.

On account of their poisonous or irritant nature, the active germicides have a utility limited particularly to surface or open-wound applications, and their free use in reaching diphtheritic formations in the mouth or throat, particularly in children, is unfortunately not within the range of systematic treatment. In Peroxide of Hydrogen, however, it is confidently believed will be found, if not a specific, at least the most efficient topical agent in destroying the contagious element and limiting the spread of its formation, and at the same time a remedy which may be employed in the most thorough manner without dread of producing any vicious constitutional effect. Although

the Peroxide is by no means of recent date, its medicinal value has been chiefly confined to the cleansing of foul ulcers and suppurating wounds, and there is hardly more than a casual mention of its utility in the treatment of diphtheria previous to a paper by Dr. Mount Bleyer on this subject.\* Quite independently of these observations, somewhat over eighteen months since, at the Metropolitan Throat Hospital, several cases of well-marked buccal diphtheria were treated with the Peroxide, with the effect of confirming in the most satisfactory manner the results obtained by Dr. Bleyer. The report of these cases was consequently omitted, pending the experiences it was supposed others would be quick to furnish on a more extended scale of the new remedy so warmly advocated. Among the somewhat small number of trial cases which have appeared at various times in the medical press, there are none in which a distinctly negative opinion is expressed, and where only a partially satisfactory result is attained there has appeared to be sufficient cause to permit a reasonable explanation for the fact. \* \* \*

A further explanation for the uncertain results attending the use of the Peroxide lies in the direction of the preparation itself, as also in the manner of its topical application. The usual descriptions allow the diluted strength of from three to seven volumes of distilled water. Inasmuch as the efficacy depends upon the ozonized oxygen in solution, it has seemed desirable to rely on the full strength of the officinal preparation of fifteen volumes, especially when used in the fauces, where any slight irritation from its acidity is not apparent. In all the cases treated, a fresh, standard Marchand's preparation of fifteen volumes was that on which the experience of the writer has been based. An equally important element is in making the application in such a manner as to produce the most determined effect on the diseased tissue with as little disturbance as possible. Swabbing the tonsils and pharynx is the rough and ready method commonly resorted to, with the second motive of detaching, if possible, the membranous formation. Such treatment is not only unnecessarily harsh toward the patient, but also in intrinsic efficacy falls far short in securing the best therapeutic value of the remedy. It is properly recognized that the removal of the membrane, unless it occurs spontaneously, is not favorable to the local conditions; moreover, the glairy mucus coating the surface does not permit the application to come fairly in contact with the disease, or so superficially as to require the most constant repetition. The latter criticism holds the same bearing, only modified in a degree, to the

---

\* *The Medical Record*, August 13, 1887.



hand-ball of vapor and spray-producing instruments that have been recommended.

A steady, coarse spray, with an air-pressure of twenty pounds or more, will in a few moments' time produce a more positive action than prolonged efforts to reach the fauces by means of cotton applicators. The force of the spray should be sufficient to cleanse at once the surface accumulations, as it destroys the necrosial elements with which it comes in contact. In this manner the removal of the *debris* and the action on the deeper structure go hand in hand.

It will be noticed that immediately on contact with the Peroxide, a white, cloudy coagulum is formed on and about the diphtheritic patches, readily floated off and exposing a more sharply defined and a flatter, smooth and whiter base. Properly speaking, there is no liquefaction of the exudation, but the decomposition of the inflammatory products is so complete that the cells are broken up and freed from the entangling fibrous net-work beneath. In a particular instance, in the case of apparently a continuous diphtheritic slough, involving the tonsils and extending in an unbroken line across the margin of the soft palate, a solitary application exhibited this effect to such a degree that the natural color of the mucous membrane appeared in spots as if the exudation might have bridged across sound tissue without as yet securing attachment to the sub-epithelial layers.

How frequently the treatment is to be followed up depends to a considerable extent on the density as well as the area of the surface involved. It may be said, however, that two applications a day, in the great majority of cases, should be sufficient, if thoroughly performed, to arrest all danger of extension and accomplish the gradual resolution of the local formation.

If the experience of the writer is confirmed, it is apparent how much time, trouble and unnecessary handling is obviated when contrasted with the methods outlining hourly or half-hourly swabbing, or, as one more frankly expressed it, "scrubbing," with nauseating applications, and culminating in the exhaustion of the patient, if not the most indifferent success. No reasonable objection can be raised either on the score of the expense or the difficulty of transporting the apparatus necessary, as small portable air-receivers can be readily obtained in the instrument shop, on the model of those devised by Codman & Shurtleff, of Boston, and which for the purpose are equally efficient as the larger stationery office fixtures.

The more recent experience of Dr. Gifford (the *Medical Record*, September 1, 1888), establishing the active germicidal properties of Peroxide of Hydrogen, rapidly diminishing in proportion to its

dilution in what might be called a geometrical ratio, appears to emphasize in a marked degree the clinical observations on which the main features relating to its employment have been based.—*The Medical Record*.

COMMENCEMENT DAY AT THE ALBANY MEDICAL COLLEGE.

Members of the Alumni Association and all who are interested in the welfare of the College will bear in mind that Commencement takes place on April 27th, and that during the morning session Dr. Theobald Smith of Washington, D. C., will deliver one lecture upon the subject: "On pathogenic bacteria in drinking water and the means employed for their removal."

- 1. "Facts drawn from hygiene and comparative pathology as to the dangers of polluted water."
- 2, "The attitude of authorities to-day toward drinking water as a vehicle for disease germs and their precise character as determined by recent investigations."
- 3. "The removal of bacteria by filtration."

**Contagious Diseases.—Monthly Statement.**—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the month ending February 29, 1892:

	Cases.	Deaths.
Typhus fever.....	0	0
Typhoid fever.....	18	5
Scarlet fever.....	71	13
Cerebro-spinal meningitis.....	0	1
Measles.....	235	14
Diphtheria.....	20	4
Small-pox.....	0	0
Varicella.....	11	0



REVIEWS AND BOOK NOTICES.

---

DISEASES OF THE BLADDER AND PROSTATE. By Hal C. Hyman, M. D. The Physicians' Leisure Library. George S. Davis, Detroit, Mich. Twenty-five cents.

In a compilation as this is, one expects to read the latest views and facts concerning all new methods of investigation and treatment. So that it is disappointing to find, for instance, that the whole subject of the illumination of the urethra and bladder is summed up in this brief sentence. "All endoscopes have failed to possess any practical usefulness, and are but rarely used." The cystoscope is not even mentioned.

When we consider that over fifty observers have contributed more than a hundred articles on the cystoscope alone, within the past few years, and that the reports on the use of the endoscope are equally as numerous, it indicates that the author has not looked at the subject in the broad light that modern research demands. Dr. Wyman in his preface says, "If his fellow practitioners find after reading these pages any material which will kindle enthusiasm for the same studies, he will feel amply repaid for the time devoted to writing." While for the above purpose, the book may perhaps fulfil its destiny, yet it scarcely meets the wants of the general practitioner. H. V. R.

THE DISEASES OF THE MOUTH IN CHILDREN. [Non Surgical.] By F. Forchheimer, M. D., Philadelphia. J. B. Lippincott Co., 1892. \$1.25.

It is perhaps curious that with the great multiplicity of writings on almost every medical subject, that no one has before written a book in the English language on diseases of the infantile mouth.

Those who have written on the special diseases of this region seem to have had no fixed nomenclature for many of these maladies; and this has been a source of much uncertainty to students and a hinderance to the proper identification and classification of these troubles. A book of this character, then, should go far in clearing up the confusion in existing pediatic literature.

The material for the work has been collected from many books and magazines, and from personal observations, and has been admirably collected into an harmonious whole.

The book contains the result of much painstaking research, and the author is to be congratulated on the scientific, interesting and clear manner in which he has handled his subject. H. V. R.

THE ESSENTIALS OF MEDICAL PHYSICS. By Fred J. Brockway, M. D.  
Sanders' Question Compends. No. 22. Philadelphia. W. B.  
Sanders. \$1.00.

So many admirable compends have appeared in this series that one expects excellence in each new publication. The volume under consideration gives no cause for disappointment. The work has been carefully and conscientiously done; and while the subjects treated are necessarily short, yet the arrangement is logical, and the explanations are clear and easy to understand.

---

### PAMPHLETS RECEIVED.

- The editor acknowledges with thanks the following pamphlets:
- An account of the Influenza as it appeared in Philadelphia in the Winters of 1889-'90 and of 1891-'92. By J. Howe Adams, M. D.
- Trendelenburg's Posture in Gynecology. By Florian Krug, M. D.
- Empiricism — Rational Practice — Practice Under Guidance of Law. By Charles S. Mack, M. D.
- Private Treatment of Insanity. By N. Roe Bradner, M. D.
- Transactions of the Detroit Medical and Library Association.
- Tuberculin. By Charles Denison, A. M., M. D.
- To what extent is the Diagnosis of Pregnancy possible in the early months. By Chas. Jewett, A. M., M. D.
- Disposal of Waste and Garbage.
- Fifth and Sixth Annual Reports of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania.
- La Grippe Epidemic, with Treatment. By George B. Bradley, M. D.
- New York Annual Address before the State Board of Health of Pennsylvania. By Prof. Samuel G. Dixon, M. D., Philadelphia, Pa.
- Apparatus for Collecting Water for Bacteriological Examination. By Samuel G. Dixon, M. D., Philadelphia, Pa.
- The Science of Homœopathy. By W. Buist Picken.
- Notes on General Versus Local Treatment of Catarrhal inflammations of the Upper Air-Tract. By Beverley Robinson, M. D., New York.
- The Surgical Treatment of Granulated Lids. By John E. Weeks, M. D.
- "La Grippe" as a Cause of Retro-bulbar Neuritis and other Ocular Nerve Lesions. By John E. Weeks, M. D.
- Additional Report of the Commissioners on Capital Punishment of the State of New York. M. Hale.
- Obstetric Problems; being an inquiry into the nature of the forces determining Head Presentation, Internal Rotation, and also the



- Development of the Amnion. By D. T. Smith, M. D.
- Rheumatism and its Treatment by Turkish Baths. By Chas. B. Shepard, M. D., Brooklyn, N. Y.
- Treatment of Laryngeal Phthisis. By Robert Levy, M. D., Denver, Colorado.
- The Therapeutic Aspect of some Ovarian Disorders. By Edward W. Jenks, M. D., LL. D., Detroit, Mich.

## PERSONALS.

In looking over the programme presented at the last meeting of the New York State Medical Society held February 2, 3 and 4, 1892, it is quite a pleasure to note the number of graduates from the Albany Medical College whose names appears there, and who either presented papers or engaged in discussions.

F. E. Martindale, M. D., class of '53, of Port Richmond, N. Y., presented a paper on "A Pathological Review of Diphtheria, with Special Reference to a New Method of Treatment, Based upon Three Years' Practical Experience."

W. G. McDonald, M. D., '87, Albany, "Some Factors in the Surgical Treatment of Perityphilitis."

O. E. Herrick, M. D., '71, Grand Rapids, Mich., "Operative Procedures for Displacement of the Uterus."

A. E. Abrams, M. D., Hartford, Conn., '81, "Gynecology by the General Practitioner."

H. C. Gordinier, M. D., Troy, '86, "Notes of Two Cases of Myxoedema with Autopsies."

C. W. DeBaun, M. D., '87, "Biliary Colic, its Diagnosis and Treatment."

Chas. P. McCabe, M. D., '83, "History of Two Cases of Sudden Death in the First Month of Pregnancy."

William Hailes, Jr., M. D., '70, "Two Dermoid Cysts, with Intra-peritoneal Rupture—Laparotomy and Recovery."

Herbert Judd, M. D., Galesburg, Ill., '67, "The Average Doctor."

We find also that Chas. H. Porter, M. D., Albany, '61, has been Treasurer of the Society longer than any other officer officiating in that capacity.

Dr. Herman Bendell, Albany, '62, has for many years served as a member of the Committee of Arrangements, and was this year elected Chairman of the Committee.

Dr. Wm. C. Bailey, Albion, '73, has served very acceptably for several years on the Committee on Hygiene.

As regards the Committee on Legislation, the work of Dr. Maurice J. Lewi, '77, is well known to all.

Dr. Porter also serves as a member of the Committee on Publication.

---

OBITUARY.

---

DR. STEENBERG. Dr. Steenberg was born on the 23d of October, 1811. He commenced the study of medicine by attending a course of lectures in Albany delivered by the late Dr. Alden March, on Anatomy and Physiology. From thence he went to the College of Physicians and Surgeons of the Western District, at Fairfield, N. Y., where he graduated in 1836. He began the practice of medicine the next year at Malta, Saratoga county, where for twenty-one years he maintained an active country practice. At the end of that time impaired health compelled his retirement. After two years of rest he was again able to take up his life work, although he never fully recovered the health, lost in the early years of his professional life.

On resuming practice he established himself at Green Island, Albany county, where he resided continuously until on February 12th, 1892, in his 81st year apoplexy ended a long and honorable career. His last days were saddened, and his end probably hastened, by the death of his wife, which occurred three weeks before his own demise.

In his practice he was always distinguished for his rugged good sense, and the methodical manner of doing his work. In the examination of his patients he arrived at his conclusions carefully, and his diagnoses were always accurate. Though he lived beyond four score years, his intellect remained keen to the last, his interest never flagged in keeping abreast with the times, and his heart was ever filled with love for his profession.

## THE LATE DR. HENRY W. STEENBERG.

At a meeting of the Medical Society, of the County of Albany, held February 22d, 1892, the following resolutions were unanimously adopted.

Whereas, It hath pleased our Heavenly Father to remove by death Dr. Henry W. Steenberg, one of the oldest and most estimable members of this Society, distinguished for his integrity of character and many professional, social and private virtues: Therefore,

Resolved, That we make record of our loss in the minutes of the society, and tender our sincere condolence to the bereaved family.

February 23d, 1892.

Signed,  
S. H. FREEMAN,  
A. VANDER VEER,  
H. S. CASE,

Committee.



# THE Albany Medical Annals

---

VOL. XIV.

APRIL, 1892.

No. 4.

---

## THE PURIFICATION OF WATER BY CHEMICAL TREATMENT.\*

BY WILLIS G. TUCKER, M. D.

PURE water does not exist in nature. It is an ideal substance to which the purest water that can be prepared by the chemist only approximates. From a chemical standpoint every foreign substance which water may contain is an impurity, but hygienically considered, water is called impure only when it contains excessive amounts of mineral matter in solution or in suspension; when it contains organic matter of vegetable or animal origin, or the products of the decomposition of such matter in quantities exceeding certain generally accepted but rather arbitrarily assigned limits, or when it is shown to contain living organisms believed to be associated with or productive of diseases which water may communicate. All filth in food or drink is to be abhorred, but, none the less, distinction must be made between that which, containing or accompanying specific disease germs, may give rise to specific diseases, and that which is, while not unobjectionable, yet apparently incapable of materially affecting health. The chemist is as yet unable to distinguish disease-producing from relatively harmless impurities in water. He can recognize those constituents which indicate organic pollution; demonstrate the present existence of putrescent material, or show that such material has previously existed by the recognition of the products of its decay, but he can by no means assert with certainty that any given water will necessarily give rise to disease or will certainly prove to be wholesome. Waters containing putrescent organic matter of animal origin have been

---

\*Read before the Medical Society of the County of Albany at a meeting held February 23, 1892.

drunk without harmful results. Such cases are on record, and on the other hand, waters which analysis has shown to be of fair chemical purity have unquestionably given rise to disease. Nevertheless the chemical analysis of drinking waters, despite the limitations and imperfections of our best processes, furnishes most valuable information, in no other way to be obtained, and I shall spend no time in a defense of this method of investigation. There are unmistakable signs of pollution which analysis may reveal and such warnings should not go unheeded. If it be shown that a well receives the leachings of a privy-vault or cesspool, or that a running stream is contaminated by sewage, as yet unoxidized and possibly infectious, such water should be condemned and neither chemist nor bacteriologist should be required to demonstrate its disease-producing power. Indeed this would be in most cases entirely impossible, such proof being seldom attainable.

Impurities in water exist in suspension or solution, and may be either inorganic or organic. Suspended matter may frequently be removed, wholly or partially, by mere sedimentation or by some simple process of filtration, but matter which is held in solution must be destroyed or removed in other ways. The boiling of water may produce a deposition of some of its earthy salts; a coagulation and precipitation of some of its organic matter and a destruction of its micro-organisms including disease germs if present, and while this method of purification is frequently serviceable as a household measure it is not adapted to use upon a large scale. By distillation a still further purification may be effected, but this is a still more costly process and can never come into general use. Within a few days I have examined a sample of distilled water prepared and sold in bottles for table use in which, while the free ammonia was high, the albumenoid ammonia was very low; chlorine, nitrites and nitrates absent, and total solids almost nil. Such water is as pure as can well be made on a commercial scale but it is necessarily too expensive to be commonly used. Aeration has likewise been resorted to for the destruction by oxidation of organic matter and is said to have been employed more than a century ago by Lind on the west coast of Africa. Considerable improvement has been effected in certain city supplies by pumping



air into the mains or reservoirs or by discharging water in jets or fountains into basins so as freely to expose it to the air. Where waters are shown to be deficient in dissolved oxygen, especially in the case of impounded waters in which patches of green algae appear upon the surface in warm weather, such treatment is often of the greatest value. It is an imitation of a natural process of purification and the change effected is not to be regarded as purely chemical, being brought about by bacterial organisms, the nitrifying bacteria, which, under favorable conditions and in presence of free oxygen, convert nitrogenous organic matter into harmless inorganic forms.

The purification of polluted water by direct chemical treatment has been effected with more or less success in many ways, all practical methods involving the separation of precipitated matter either by sedimentation or filtration after treatment of the water. In other words, there is no chemical agent which, by simple addition to impure water, will render such water pure and wholesome. By chemical treatment we may precipitate lime and other earthy salts if present in undue quantity; coagulate and remove organic matter and bacteria, or promote the oxidation of such matter, and various processes accomplishing, more or less perfectly, these results, have, during recent years, been employed.

Clark's process, designed particularly for the softening of water owing its hardness to bi-carbonate of lime, consists in the addition of milk of lime, which results in the formation of an insoluble carbonate subsequently separated by sedimentation. Colored and turbid waters are clarified and organic matter and living organisms largely reduced by this treatment, as has been shown by Dr. Percy F. Frankland, (*Chemical News*, vol. 52, p. 40.) and others, but if much organic matter is present the precipitation does not readily occur and filtration must be resorted to as in the Porter-Clark process. Other methods for softening water involve the use of caustic soda in addition to slaked lime, as in Howatson's process and the use of tri-sodic phosphate, now a commercial article, by which means the salts producing permanent hardness are largely removed, and in the household carbonate of soda (washing soda) is employed for the same purpose,

though its use is impracticable on a large scale on account of the expense.

Such methods as these however are primarily intended for purifying water for laundry use, manufacturing purposes and making steam. They are more important from a technical than from a sanitary standpoint and we pass from these to speak of those processes in which the main object is the removal of constituents believed to be harmful to health. Before so doing, however, a few words concerning filtration may not be out of place, the more especially as either sedimentation or filtration is generally necessarily connected with every process intended for the purification of water. Filtration which is a mere straining, as for example continuous filtration through sand or animal charcoal, may clarify a water without otherwise improving it in any respect, and if, after a time, the filter becomes foul, the water may be polluted rather than improved. I regard with disfavor most of the old-fashioned filtering appliances, which not only gave a false sense of security, but often served as breeding-places for the growth of living organisms. A house filter which is not easily cleansed is an abomination, being generally allowed to take care of itself and in time becoming a source of real danger. A few years ago a case of no little interest was reported in the *Chemical News* (vol. 52, p. 70). Two samples of water were analyzed for a family in which one member was ill with typhoid fever. One of the samples was from the house supply direct and the other was the same water filtered through a portable charcoal filter of the common type. This latter sample yielded a much larger amount of albumenoid ammonia than the former; decolorized five times as much permanganate of potassium and was in every respect objectionable. On inquiry it was learned that the filter had been in use for more than a year, and that in the place where the owner had formerly resided he had found the water so bad that he had made use of it to filter that which he used for his bath. A few years ago when typhoid fever prevailed in Providence, R. I., and seemed not to be fairly attributable to the city water supply, Dr. T. M. Prudden, examined several of the filters used in private houses and found the typhoid bacillus in no less than three of them. (*New York Medical*



*Journal*, vol. 50, p. 14.) Filters giving such results, it need scarcely be said, are a constant menace to health, but those which allow of easy cleaning by reversed currents of water are free from most of the objections attending the use of the older forms. Five years ago I analyzed some samples of Albany water, filtered through a well-known filter manufactured in this city (the Blessing Duplex Filter), and found that a sample of water obtained by washing the filter after a day's use, yielded of albumenoid ammonia, 0.1850 parts per 100,000, showing that the filter had retained a large amount of organic matter. Water which had passed through the sand of the filter only, yielded 0.0023 and that which had passed through both the sand and charcoal yielded but 0.0014 parts per 100,000. This latter quantity is about one-tenth that ordinarily found in our city water and this is certainly a very good showing. Two years since I analyzed water which had been drawn from our upper service, both before and after filtration through the same filtering apparatus, and found the free ammonia reduced to a fifth; the albumenoid ammonia to a fourth and the oxygen absorbed to two-thirds of the amounts originally present, by filtration, while a sample of water from the lower city service had its free ammonia reduced to a fifth; albumenoid, to a tenth and oxygen absorbed to a twelfth, indicating a vast improvement in a water at that time in singularly bad condition. These results I believe to be largely due to the efficient action of the animal charcoal, which in this device acts, not as a strainer or filtering medium proper, but as an oxidizing agent, provision being made for its constant aeration. In many filtering appliances animal charcoal is a fruitful source of trouble and danger, but if the real filtration is accomplished by other material and the coal is subjected to frequent aeration and renewed when necessary, it is a most valuable agent for effecting the oxidation of organic matter. I purpose soon to make some experiments with a view to determining how long animal charcoal retains its activity in such filters, though it is very certain that, with proper treatment, it will continue to operate satisfactorily for a long time.

Of the chemical agents which have been employed in water purification the most important are metallic iron, solu-

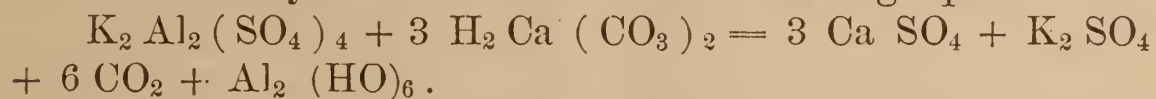
tions of iron salts, generally the chloride, permanganate of potassium and alum. Spongy iron, obtained by the reduction of hematite ore at a temperature a little below that of fusion thereby rendering the metal porous or spongy in form, was first made use of by Bischof, whose process was patented in England in 1871, though Dr. Medlock had secured a patent in 1857 for a process of purification based upon the use of metallic iron plates, and Spencer in 1867 introduced a material which he called magnetic carbide in which the active agent was iron. The carbonic acid in the water, acting upon the iron in one or the other of these forms, produces a ferrous carbonate, which, by oxidation yields hydrated ferric oxide, and this is believed to effect the oxidation of organic matter and serve as a coagulant as well, producing a flocculent precipitate which is subsequently separated by sedimentation or filtration through sand. Such methods have been employed with more or less success in various European cities, but Anderson's process, which has been successfully used at Antwerp, Ostend, Paris and Vienna, has generally replaced other methods of purification by iron. In this process the water is forced through revolving purifiers consisting of iron cylinders revolving on hollow trunnions which serve for inlet and outlet pipes. On the inner surface of the cylinders are curved ledges running lengthwise, which scoop up and shower down through the water fine cast iron borings as it flows through the cylinder so that every portion of the water is brought into contact with the iron which is kept constantly bright and clean by attrition. The water issuing from the purifiers is exposed to the air, by allowing it to flow through a trough, to secure the precipitation of the ferric hydrate, and by filtration through sand this precipitate is subsequently removed. It is claimed for this process that the organic matter is altered in form and largely destroyed, the albumenoid ammonia being reduced to from one-half to one-fourth, and micro-organisms largely destroyed or removed. At Antwerp 2,000,000 gallons daily are thus treated and Professor Edward Frankland has shown that this water is completely sterilized and nearly all its organic matter removed. The cost, previous to the introduction of settling reservoirs before filtration, has been \$4.00 per million gallons.



In a paper read before the Franklin Institute in 1890 by Easton Devonshire, C. E., it is estimated that the cost of working expenses, with an output of 5,000,000 gallons per diem or over, should not exceed \$2.00 per million.

Ferric chloride has been employed in Holland for removing clayey matter and organic impurities from the water of the Maas which supplies Rotterdam. Carbonate of iron is formed and decomposed with separation of ferric hydrate which coagulates and removes the organic matter, but such treatment is attended with many difficulties and is not likely to come into general use. The same may be said of the employment of permanganate of potassium which oxidizes organic matter and by its decomposition yields manganic hydrate which precipitates much of the suspended matter present in the water. Such processes may be successful, here and there, on a small scale, but they cannot as yet be practically or economically employed in the purification of large supplies.

The only other purifying agent of which we need speak is alum. It is said to have been used for centuries in China and India, but particular attention was first directed to its use by Jennet in 1865. Most waters contain more or less bicarbonate of lime in solution and the alum acting upon this constituent yields sulphate of lime, carbonic acid gas and aluminic hydrate as shown in the following equation:



As the aluminic hydrate forms and deposits it not only entangles and carries down finely divided suspended mineral matter but coagulates and removes much of the dissolved organic matter as well. By this means peaty and other colored waters are decolorized; turbid waters containing finely divided clay are clarified and bacteria removed. Professor A. R. Leeds in an experiment performed upon the water used at Mt. Holly, N. J., found that alum, added in the proportion of half a grain to the gallon, produced the following effect: "On standing the peaty matter was entirely precipitated in reddish-yellow flakes and the water above became perfectly colorless and clear. On pipetting off some of this supernatant fluid I found that instead of containing 8,100 colonies of bacteria per cubic centimeter, as it did before

precipitation with alum, it contained only 80 colonies. On filtering some of this supernatant water through a double thickness of sterilized filter paper into a sterilized tube I found no bacteria in the filtered water. In other words the water had been rendered by the addition of an amount of alum so minute as to be inappreciable to taste and almost to chemical tests, *as sterile as if it had been subjected to prolonged boiling.*" (*Journal American Chemical Society*, ix, p. 154.)

Austen and Wilber made a valuable report to the State Geologist of New Jersey in 1885, on the "Purification of Drinking Water by Alum." They found that 1.2 grains per gallon was sufficient for the complete precipitation and clarification of the New Brunswick city water, if sufficient time was allowed for settling. Such an amount is imperceptible to the taste and can exert no physiological action. If more alum is used less time is required for sedimentation and vice versa. More than two grains to the gallon was seldom required. They showed likewise that waters which will not yield clear filtrates on account of their containing finely divided clayey matters, even when filtered through the finest filter paper, were immediately coagulated and precipitated by 1.16 grains of alum to the gallon, so that they could be filtered immediately after adding the alum, yielding brilliantly clear filtrates, and, in their opinion, no more than twice this quantity, or about two grains per gallon at most, need ever be employed.

In January, 1889, a sample of peaty water from Athol, Mass., having a decided yellowish-brown color, was submitted to me for examination. Difficulty had been experienced in clarifying this water by filtration and I made some experiments to determine the action of alum upon it. Our city supply was at that time yellowish in color and slightly turbid, and this was also tested. It was found that, in both cases, the addition of alum in the proportion of 2.3 grains per gallon gave rise at the end of twenty-four hours to a yellowish flocculent deposit, undergoing no further change on standing for four days, the water becoming clear and almost perfectly colorless. The waters were tested again by adding the alum, shaking in a flask and immediately filtering through paper. The city water became transparent and perfectly colorless and the peaty water retained but a very faint, almost impercep-



tible, yellowish tint. The peaty water yielded originally 0.0225 parts of albumenoid ammonia per 100.000, but after the addition of alum, agitation and filtration, it yielded but 0.0060 parts, or about one-fourth as much, showing how great an improvement had been effected.

For household use on a small scale water can be easily clarified and purified by placing a layer of clean cotton, two or three inches deep, at the bottom of a glass percolator, such as is used by druggists, and pouring the water to be filtered, to which solution of alum has been added, into the percolator and allowing it to drip through into a clean vessel placed to receive it. The alum solution is conveniently made by dissolving half an ounce of alum in a quart of water, and of this solution a scant teaspoonful should be added to each gallon of water to be filtered. Alum is now used in a number of filtering and purifying systems which have of late years been brought prominently before the public by their inventors or the companies controlling them.

If now it be asked, do such processes as these which we have described, admit of practical and economical application to the purification of large volumes of polluted water for the supply of our great cities, I fear that an unqualified affirmative answer can hardly be given. In American cities the consumption of water is much greater than in European towns. The *Encyclopaedia Britannica* states that "the consumption varies greatly in different [English] towns, ranging from about twelve to fifty gallons per head per day," and that "an ample supply for domestic use and general requirements is from 20 to 25 gallons per head daily." With us a hundred gallons is frequently supplied. Albany wants 15,000,000 gallons with a population of less than 100,000. Philadelphia and St. Louis consume 70 gallons; New York, 80; Boston, 90; Chicago, 115 and Detroit 150, while Glasgow, Dublin and Edinburgh consume but 50, ; London, 40; Birmingham, Leeds and Liverpool about 30 and Manchester and Sheffield still less. On the continent it is about the same. Paris uses about 50 gallons; Hamburgh and Dresden, 60 and Leipsic but 23. In American cities the waste of water is enormous and to purify one gallon for drinking and household uses and nine gallons for flushing water-closets, watering streets and extinguishing fires

must ever be a wasteful process to say the least. Many towns in this country are now using water purified by artificial means with apparent satisfaction but I do not think that the time has come when it can be said that such purification is practicable in all cases. Certain methods, like the Anderson process, give excellent results under favorable conditions, but competent engineers have not recommended them for American cities. Sedimentation, coagulation, filtration, aeration all these have passed the experimental stage and are in a sense practical, but that processes involving so much manipulation can be advantageously employed in treating the enormous volumes of water required by large cities, especially where pumping is also necessary, is not as yet demonstrated. As regards filtration alone, it may be said that in our climate the filter beds which give satisfactory results in many parts of Europe cannot generally be employed to advantage, and that this method of filtration has been by no means uniformly successful even in Europe. In a recent report, Dr. Theobald Smith has called attention to the fact that in the Berlin epidemic of typhoid in 1889, "the distribution of the disease was identical with that of the filtered river water" the filter beds being worked with great rapidity to make up for a deficiency in the water supply and the filtered water containing at times 4,000 bacteria per cubic centimeter. In discussing this case he says: "These facts go far to prove that polluted water, when immediately delivered for consumption even after filtration, is not wholly safe. They likewise make prominent the fact while filtration largely rids a given water of its bacteria, it is a process requiring the utmost care, the most constant attention, not only on the part of the engineer, but also of the chemist and bacteriologist. We are furthermore convinced" he adds, "by these experiments that surface water which shows very little, if any pollution, and which is stored before use, is safer than filtered water which before filtration is being manifestly contaminated with sewage." As regards methods of rapid filtration under pressure, combining chemical treatment of the water, generally by alum, as well, various systems are in use in this country, controlled by individuals or companies employing a



variety of patented devices. Granting that the results in some cases seem to be excellent, I think the time has not yet come when they can be unhesitatingly recommended for the purification, in all cases, of large city supplies. I know of no city with a population of one hundred thousand that is using such a process to-day. That numerous infectious diseases are conveyed by water admits of no dispute. In my opinion it is vastly better to purify our sewage before discharging it into the streams which supply us with water, or keep it out of them if practicable altogether, than to attempt to purify the water which it pollutes. Chemical treatment and filtration may be practicable and efficient in certain cases, but I believe that the statement by the Rivers Pollution Commission of England, more than twenty years ago, in their sixth report is as true now as it was then: "Nothing short of the abandonment of the inexpressibly nasty habit of mixing human excrement with our drinking water can confer upon us immunity from the propagation of epidemics through the medium of potable water." The cities of this country may eventually be driven to methods of artificial purification of their water supplies, but it cannot be said that the conditions necessitating such action generally exist as yet. In most cases the safer and more economical course will be found to be either the securing of an unpolluted water, if such be available, or the protection from pollution of existing sources of supply.

---

### ECLAMPSIA.\*

BY F. L. CLASSEN, M. D.

Eclampsia is described as an acute disease coming on during pregnancy, labor or the puerperal state and characterized by a series of tonic and clonic convulsions, affecting at first the voluntary muscles, and finally extending to the involuntary muscles, accompanied by a complete loss of consciousness and ending by a period of coma or sleep, which may result in cure or death. The precise pathological nature of this affection has not been determined. Many theories have been advanced as to its cause. Defective renal elimi-

---

\* Read before Albany County Medical Society, March 9, 1892.

nation seems to be an important factor. The older writers still adhere to its toxic origin; the essential elements of the disease being regarded as a toxaemia and which may be so intense that normal kidneys may not be able to eliminate the poison.

Dr. Blanc says it is due to a specific bacillus which causes not only the nephritis but the convulsions. Scarlini repeated Blanis experiments and isolated a rod-shaped bacillus from the blood and urine of two eclamptics, cultures from which when inoculated into gravid bitches produced convulsions, and the same symptoms as seen in eclamptic women. He has found the blood-serum in this condition decidedly toxic, and concludes that eclampsia of pregnancy is of an infectious nature. Richardson has reached the conclusion that when the kidneys are properly secreting convulsions do not occur. The cause of the renal changes seems to be due to the increased work put upon the kidneys during pregnancy, in the increased intra-renal pressure, as well as in the products of excretion which irritate the renal substance in passing. Wood says that the presence of albumen less than one-fourth per cent. with casts of small diameter should cause no alarm, but when the amount of albumen reaches one-half per cent. and the casts of large diameter the patient should be watched. What this poison may be remains to be seen. It is probably the product of the peculiar and excessive tissue change of pregnancy. There is a very interesting article in the *Medical Record* of August 22, 1891, by R. Van Santvoord, M. D., of New York, giving his views of the pathology of eclampsia and Albuminuria of pregnancy, to which I refer the members of the society.

The treatment of this affection divides itself into the prophylactic treatment, and the treatment at the time of the convulsions. As to the first: It would be well for practitioners to examine the urine of pregnant women, especially during the last three months of pregnancy, regardless of the fact that there may exist no subjective or objective symptoms pointing to albuminuria. If albumen is discovered, the milk diet treatment as recommended by Tanier is well worthy a trial. He says it is a prophylactic against the convulsions and should be persisted in until all traces of albumen have



disappeared. In conjunction with this treatment have a free action of the bowels, kidneys and skin and regulate the digestive organs. Chloroform is spoken of as a prophylactic, beginning with twelve drop doses, gradually increasing the dose to fifteen or twenty drops. When the convulsions have declared themselves, what is the best plan of treatment? What remedial agents are at our command? Numerous remedies have been tried and have been found wanting. From my reading, and having seen good results from Venesection, in a few cases, my treatment would be, first, Venesection, followed by chloroform, morphine and chloral, in the order named, if necessary. By Venesection, we relieve the cerebral congestion and the tendency to renal congestion. In the discussion before the British Medical Association, July, 1891, Drs. Galabin and Swaynl favored this treatment, the former advocating the withdrawal of a large amount of blood. (forty ounces).

Dr. A. Charpentier's resume of treatment is as follows:—Albuminuria once established, put patient at the beginning on a milk diet, bleeding if necessary beforehand to the extent of 4,500 or 6,000 grains without going beyond this limit. If this preventative treatment fails, and if Eclampsia develops, Venesection must be performed and from ten to sixteen ounces of blood withdrawn. An enema of from one to four of chloral should be given, and if necessary during the paroxysms a few inhalations of chloroform. Some writers advocate the withdrawal of a large amount of blood others a small quantity; the judgment of the physician must determine that.

In the October 24, 1891, number of the *Medical Record* is a very able article by Dr. Eugene R. Corson of Savannah, Ga. I will quote what he says in regard to bleedings:

“Bleeding was the remedy years ago; the trouble was it was used indiscriminately, was too heroically employed, and it fell into disfavor. It is now coming back again, restricted and modified. For a long time I could not make up my mind to use it. I was under the impression that the system lost quite enough blood on the delivery of the placenta. During the last three years I have bled several patients with excellent results when properly applied. In the severe cases of Eclampsia, and where bleeding is most useful, there is apt to

be but little or no hemorrhage with or following the delivery of the placenta, and I have found that one of the first indications of the approaching convulsion would be a complete suppression of the lochia. For this reason I am careful to have the nurse watch this symptom, and an unstained napkin puts me on the lookout at once. This lochial suppression is accompanied by a diminished or suppressed flow of urine. I have seen the withdrawal of a pint of blood immediately start up the lochia again and tide the patient over the critical moment. The withdrawal of blood, varying in quantity from a pint to a quart, will, in itself, stop the convulsion for a time, at any rate; a full bounding quick pulse will be reduced in volume and frequency, and, strange as it may seem, a weak and rapid pulse will become stronger and slower. As far as my experience goes, this latter pulse is the one most frequently met with. Even during convalescence the pulse is apt to be high. Under the same influence a hard and rigid cervix will soften, a diminished or suppressed flow of urine will start up again.

“A patient in puerperal convulsions, with all its attendant conditions, will be found to require much larger doses of anodynes and narcotics to produce their effects than in ordinary cases. There is a marked lack of response to all drugs. A sufficient bleeding improves the responsiveness to drugs and diminishes the dose one-half. It is surprising how quickly and how long an ordinary dose of morphia will act after a sufficient phlebotomy. The nervous and vascular symptoms point to a spastic condition of the arterioles and capillaries, and bleeding relieves this, and the nerve centres become more responsive.

“When and how much to bleed are important questions. The simpler cases will require no bleeding. I should bleed at once when the symptoms are violent—full bounding pulse, poor reaction after the convulsion, suppressed or scanty lochia, scanty urine, violent headache, rigid os, and especially if the convulsions antedate the full term of labor. A lack of responsiveness to drugs is a good indication for the lancet. If, after one bleeding, its beneficial effects die out, the pulse returns to its former condition, the lochia, and urine be diminished or suppressed, I bleed again, graduating the



amount by the conditions of the case. If called in time and the premonitory symptoms portend trouble, I should unhesitatingly bleed as a prophylactic measure. Here, as everywhere in medicine, the physician's quick perception and good judgment must come into play."

Venesection has its opponents as well as its supporters; as also has Chloral, Chloroform, Veratrum Viridi and Morphine; but used intelligently to my mind, it is an efficacious remedy for puerperal eclampsia.

Since writing my paper I wrote to Dr. W. H. Johnson of Birmingham, Alb., who was to have read a paper before the New York State Medical Society on the Treatment of Puerperal Convulsions, asking him for his treatment in these cases. The Doctor's success has been with Norwoods tincture veratrum viridi. He says: "If the convulsions are severe I give one-half grain morphia hypodermically and then from ten to twenty minims of Veratrum hypodermically. If the pulse is full and bounding and 120 or more I give not less than twenty minims, if not over 100, ten minims will suffice. If there is a convulsion, thirty minutes after the hypodermic injection of veratrum, I give from ten to fifteen minims more. I have never had to repeat the veratrum, just as soon as your patient shows signs of nausea and commences to vomit you can feel easy that your patient will not have any more convulsions." He also says: "If I was restricted to one remedy I would unhesitatingly take veratrum and discard all others and would feel that it was as nearly a specific as anything can be and if properly used there is no danger in it."

---

## HYPERPHORIA, AND CASES ILLUSTRATING THE SAME.\*

BY G. S. MUNSON, M. D.

EVERY ophthalmic surgeon in his attempts to correct errors of refraction now and then has the experience of finding a case which seems to baffle his best skill and most determined and persistent efforts to obtain relief. Often in such cases there is at length found to be some one of the different forms of heterophoria or eye strain due to a weakened

---

\*Read before the Albany County Medical Society, March 9th, 1892.

or anomalous action of one of the recti or oblique muscles. On investigating a large number of such cases, which as a specialist has happened to come under my care and attention, I have again and again found the cause to be a want of equilibrium on the part of the superior or inferior recti muscles, a condition which our former distinguished fellow confere, Dr. George T. Stevens, has very appropriately termed Hyperphoria.

The old and crude method of determining insufficiencies of ocular muscles by screening the eye and watching its action when fixed vision was removed from it has happily been replaced, through the invention of the Phorometer, by Dr. Geo. T. Stevens, with methods of accuracy which gives us exact measurements. Scarcely in any part of the domain of the ophthalmologist in recent years has such scientific researches and advancements been made as in our knowledge to-day of muscular anomalies. Dr. George T. Stevens, who for many years was an honored member and co-worker of this society, was the first observer to dare step from the beaten path of research and old investigations and announce a discovery which soon branded him as an imposter and crank. I well recall that some ten years ago one who was considered one of the leading eye specialist of this country while lecturing to an ophthalmic class in New York city, announced to his students that he had in mind an article which he intended to write and the title would be "The Border Land of Quackery," and he added "there is our friend Dr. Stevens with his ideas of muscular troubles; we will have to put him on the list." Fortunately the article never appeared. To-day Europe and American honors the aspiring genius of our former colaborer and fellow townsman.

Hyperphoria briefly defined means a difference in the height of the visual line of the two eyes; hyper above, and phoros a tending. That this difference in height is not an uncommon occurrence, and its existence the cause of asthenopic symptoms, has been time and again proven as we are learning to more carefully test the relative strength of the ocular muscles. It is not a negative condition, but a most positive one; and I am persuaded none exerts a more disturbing influence in producing both local and remote symptoms.



The local relate direct to the act of vision such as confusion and indistinctness of images, while the remote are of a reflex and nervous character.

As is well known the function of the superior and inferior recti muscles is to keep the horizontal meridians of the two corneas parallel. This must be or either troublesome double vision will result, or double vision may be prevented only by excessive work on the part of the weaker muscle. Hence it follows that where there is perfect equilibrium of the recti muscles the parallelism of the horizontal meridians is maintained without trouble; but if the superior rectus of either eye is too strong for its inferior or *visa versa*, then this parallelism is no longer easily and unconsciously maintained, but we have a condition of muscular weakness which brings on a variety of nervous subjective and objective symptoms, for the prevention and cure of which we have also a variety of means, the most prominent being either the use of the knife, or else the use of proper prisms most carefully adjusted to each individual case.

In the treatment of hyperphoria one must consider not only the degree which exists, but also the amount and character of disturbances which it causes. For example, I have seen hyperphoria of less than one degree give rise to considerable trouble in shape of headaches and nervous symptoms generally; while again an amount of six degrees or more has been present without causing any pronounced disturbance. But wherever it does exist it is much more liable to produce asthenopic and head symptoms than the lateral deviation.

The first step in treatment should be to correct any error of refraction which may be present. Having corrected the refraction, and we find the degree of hyperphoria does not exceed three or four degrees we can usually correct it either by the decentering of the glass or by the use of a prism base up or down as the case may require.

When the hyperphoria is greater than four degrees nothing will avail short of an operation; however as the large majority of cases are under rather than over this degree a prism glass is the rule and the operation the exception. The choice being largely optional the use of a glass, since it relieves

the annoying symptoms, is almost invariably preferred by the patient to the more radical cure by operative interference. I might add that in my experience I have never been able to derive any benefit from the use of galvanism or internal medication.

The several cases of muscular troubles called hyperphoria, which I desire to record to-night are not to be classed among those cases of strabismus, in which one of the eyes goes away off on a tangent and is plainly evident to any observer, but they are those cases where the weakness of the muscles was so hidden from the observer that the patients and friends would have ridiculed any suggestion of the presence of a cross eye. In this respect we find an analogy between muscular troubles and very low degrees of errors of refraction, for as a few years since it was considered unnecessary to take into account slight refractive errors as a factor in producing reflex nervous disturbances which we now know is of the utmost importance, so is the change taking place everywhere in regard to the necessity for the detection and correction of the least of these muscular troubles.

Case 1. Miss C. A. G., age 30, school teacher, referred by Dr. George Cox, consulted me January 2, 1889. The attitude of this lady as she entered my office was very characteristic of her trouble. She carried her head habitually toward her right shoulder, and in fact that shoulder was also drawn up so that she looked really deformed. Her friend knew Miss G. as far as the eye could distinguish her by this pronounced deformity. She informed me that she had always, as far as she could remember, had this peculiar attitude, and she did not consult me about that, but for relief to frequent headaches and vertigo whenever she walked in the streets, both of which she thought might possibly be caused by some trouble with her eyes. Her vision proved to be normal in each eye, while the ophthalmoscopic examination showed each fundus to be healthy. On examining this lady with Stevens phorometer, the head being held perfectly vertical and the candle light at twenty feet away, there was found to be a left hyperphoria of four degrees. Placing a red glass before one eye there was found a difference of several inches in the height of the two images, a prism of four degrees being required to



bring them level. Miss G. refusing to have a graduated tenotomy performed at the time on account of school duties, but promising in the summer to have the operation performed, I gave her a pair of prism glasses one degree base up on the right eye and two degrees base down on the left. It was remarkable to note the immediate result of these glasses. She could now carry her head perfectly straight, the headaches disappeared, also the vertigo. After a few days trial she appeared at the office again to inform me that the prisms were a perfect success; that she never knew what it was to have such comfort before, both in reading and in walking, and if such relief continued she surely never would submit to an operation. As the lady brought me another patient a few weeks ago, I am here able to state the relief has been permanent.

Case 2. Mrs. W. of Glens Falls, referred to me by Dr. George Little, her family physician. Mrs. W. consulted me first in 1881, was of an exceedingly nervous temperament, and presented the usual asthenopic symptoms of pain in both eyes and head, inability to use the eyes for more than two or three minutes at a time, and a confused blurred condition of vision which would cause nausea and faintness. I first gave her glasses for what I judged might be latent hyperopia with spasm of accommodation. From 1881 to 1888 I saw this lady a number of times, each time making some slight change in her glasses. She would invariably turn up at each visit with the same old story of disappointment and no relief. At length early in 1889, having had my attention and studies directed especially to the muscles of the eyes and their weaknesses, I sent for Mrs. G. and at this visit carefully examined her for muscular asthenopia, found one degree only of right hyperphoria. It happened that I had a pair of glasses in the office at the time with this weak prism in the frame, and asking her to wear this glass for a few hours I sent her to view the interior of the state capitol building. On her return to the office she positively refused to give up this pair of glasses insisting on taking them home with her and returning them when she had received a new pair. It was she said the first real relief from almost constant headaches that she had experienced in ten years. She has now worn prisms over three years and the relief has proved permanent.

Case 3. Mr. W, age thirty-six, engraver, home in Boston, Mass., consulted me March, 1891. His eyes began to give out about a year previous. Had tried numerous glasses but had found none to relieve him permanently. A + O . 75 D, was what he had used with most relief, but still he complained that his eyes seems to be so much "out of gear" that unless he could get some permanent relief soon, he was fearful he would have to give up his occupation. He had also more or less frequent headaches, was nervous and excitable without cause, and tilted his head slightly to the left. With the phorometer there was found two degrees right hyperphoria, the visual line of the left eye tending above that of the other eye to that extent. Mr. W. being anxious for a permanent cure I advised a graduated tenotomy on the superior rectus muscle of the right eye after which he was to use his plain spherical glasses. With the use of a four per cent. solution of cocaine, this operation was at once performed, after which he was again tested for hyperphoria but none found. At the end of ten days he returned to his exacting labors much encouraged. He has lately written that his eyes now feels as strong as they ever did; he no longer carries his head tilted on his shoulder and his headaches and nervousness are a thing of the past. I have mentioned this one case largely because of the immediate relief experienced from a graduated tenotomy of the muscle.

Case 4. Miss M., age twenty-four, a clerk in one of our large dry goods stores, consulted me September, 1891. Found her excessively near-sighted. Had worn glasses some years, but as pain had been present in the eyes for weeks and thinking that a change of glasses might relieve it, she had gone to one of our advertising opticians and obtained new ones with the result of not relieving the pain, but thereby increasing it so that her very existence was one of misery.

By the way, permit me to digress for a moment that I may express my sympathy for the confiding ones who so often are found in the "optical department" which exists in our prominent jewelry stores, having been lured there by the newspaper advertisements of the skill of its opticians in examining eyes "free of charge." We all know that where one gives nothing among merchants they get nothing



in return, so it is with eye examinations "free of charge," and the injury and ruin which sometimes such an ignorant and careless examination causes, I might add, will never be known.

To return to Miss M. case, I found a myopia of 12. D. each eye which correction gave her vision  $\frac{2}{3}$ . With the glasses she had been wearing she had vision  $\frac{2}{7}$  with difficulty. On examining her old glasses, I was surprised to find each number 12. D. the same as what from my trial case gave normal vision, and yet with them on she had but  $\frac{2}{7}$  vision. The case perplexed me. However, on examining her with the phorometer the difficulty was quickly discovered. The glasses were in such a faulty position before her eyes that they were acting as prisms of four degrees, and there was thus caused artificially by the glass a hyperphoria, equal to four degrees. The same pair of glasses she had been endeavoring to wear when placed from their drooping position to one directly in front of the eyes, so that she looked through the optical center of the glass and not the upper and lower edges now gave her normal vision and relieved her from her confusion of objects and severe headaches.

In closing this article I would only add that it has been my endeavor to state positive facts as they have appeared to me and not to exaggerate at all the importance of ocular troubles and the many disturbances to which they give an origin. The cases cited you are but several taken from the many found in my case books. In all these examples of muscular troubles we have found a local difficulty with more or less remote symptoms such as headaches, vertigo, nausea, and other nervous symptoms. Relieving the eye strain has at once shown a pronounced cure to all the nervous symptoms and in many cases the general health of the patient has been seen to improve and to regain its tone and vigor, probably because the enjoyment of vision has such a controlling influence over everybody's happiness. Should any skeptical mind desire a direct proof of the action of prisms let such a one place a pair of spectacles containing weak prisms with base up on one eye and base down on the other before their own normal eyes and in an hour or two note the results. You now have an eye strain such as

the cases cited you had without their glasses, namely headaches, dizziness, nausea, and even vomiting in some, especially susceptible persons.

Muscular asthenopia then, and especially that form called Hyperphoria, is of a not uncommon occurrence; and is of such a character when present as to cause both subjective and objective symptoms, and particularly a disturbance of the visual centers of the brain which in turn causes many reflex neuroses.

---

### TUMOR OF THE LEFT TESTICLE.

BY WILLIS S. COBB, M. D., Corning. N. Y., Class '90.

**M**R. E. M., aged thirty-three, married, native of United States, coffee roaster by occupation, family history good, having passed through the ailments peculiar to childhood without having any permanent effects, habits good, and free from constitutional vice.

May 1st, 1891, he consulted me at my office in regard to an enlargement of left testis, and the following history was obtained: Three months prior, he sustained an injury to testis, but manifesting very little inconvenience, he did not consult any physician concerning it. Some two months later, his suspicion was aroused by perceiving that his left testis had slowly enlarged, although not causing any marked inconvenience either to his comfort or from following his usual occupation. Physical examination revealed left testis enlarged, hard, non-sensitive nor painful upon manual manipulation, two and one-half inches in length and five inches in circumference, right testis somewhat diminished in contour and dimensions, no constitutional manifestations, general condition of health good. Topical applications were prescribed and a suspensary bandage was ordered to be worn. Did not see patient again for about four months, during this time he consulted and was treated by several other physicians. During this period growth steadily increased, although painless. Slight fluctuation perceived on the 20th day of September, and on aspiration with hypodermic syringe the results were unsatisfactory, only a little blood withdrawn.

I was present in consultation October 28th, and aspiration was advised with Allen's surgical pump, as a means of diagnosis. About one ounce of fluid, limpid and blood stained in character was withdrawn. On microscopical examination it consisted of cellular elements of new formation.

November 2d. The case came back to me. Physical examination



revealed testis enlarged, seven inches in length, and ten inches in circumference, hard, smooth, exhibiting slight fluctuation in certain points, somewhat elastic, slightly painful on pressure, cord not involved, nor any glandular enlargement, the growth extending up to the external inguinal canal, right testis atrophied, no constitutional disturbance, no emaciation nor cachexia, diagnosed an adenoid cystic growth, advised an exploratory incision and if necessary castration of left testis.

November 5th, I operated, assisted by Drs. Bourne, Hedden, Denerlein and McNamara. Incision was made extending from left external inguinal canal to base of scrotum, about six inches in length, found tunica vaginalis adherent, aspiration with hypoderemic syringe revealed limpid fluid, tinged with blood. A firm silk ligature was thrown around the spermatic cord and its appendices, as a safeguard against hemorrhage, and having separated the adhesions from scrotal, the testis was cautiously enucleated, and the cord, artery, vein and vas-deferens was dissected out and ligated separately and thoroughly fastened. The cord was separated and wound thoroughly cleansed with carbolic acid solution. A rubber drainage tube was inserted and wound closed with interrupted sutures, dusted with aristol and dressed and patient placed in bed. And the following was given with gratifying results: R. Chloralamid dr. 2, spirits Frumenti oz. 1, syrup Raspberry oz. 1, M. Sig. one tablespoonful every one or two hours, as needed.

The temperature only manifested slight febrile movement, the highest being 101 degrees F., and the wound healed kindly by first intention. Patient was up and dressed and around the house on the fourteenth day. On examining growth after removed, weight, twenty-two ounces; dimensions—length, seven inches; circumference, ten inches; had a smooth appearance; on cutting into the tunica vaginalis, about three ounces of clear watery albuminous fluid exuded. On incising the tunica vaginalis propria about three ounces more of bloody pus was revealed. Several other smaller cysts were found in testis proper, also a small solid body resembling very much a large sized flat bean. No microscopical examination was made after removal. At this date, there are no indications of return of disease in the other gland, or any enlargement of neighboring glands. Recovery seems complete, and his sexual desire and capacity seems unimpaired.

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—No. 4.      APRIL, 1892.      \$1.00 A YEAR.

---

DEAR DOCTOR.—The Association of the Alumni of the Albany Medical College will hold its Nineteenth Annual Reunion on Wednesday, April 27th. The order of exercises for the day will be as follows :

9 A. M.—Reception in Library. Coffee and sandwiches served.

10:30 A. M.—Annual meeting in Alumni Hall. Program: 1, Faculty address of welcome, Dr. J. D. Craig; 2, Minutes; 3, Reports; 4, President's address; 5, Report of Historian and Class Historians of '52, '62, '72 and '82; 6, Election; 7, Miscellaneous business; 8, Reading of letters, etc.; 9, Impromptu speeches.

3 P. M.—Commencement exercises at Harmanus Bleecker Hall. Address by Rev. Dr. George T. Dowling, Albany.

8 P. M.—Lecture, Theobald Smith, M. D., Alumni Hall. Theme: Purification of Potable Water.

9 P. M.—Alumni Dinner at Delavan House.

You are cordially urged to be present. Please notify the Corresponding Secretary of your intention and enclose your photograph for Alumni collection unless previously furnished.

Yours fraternally,

HORACE R. POWELL, M. D. ('82), President.

CHARLES M. CULVER, M. D. ('81), Cor. Secretary,

36 Eagle Street, Albany, N. Y.



## ANNOTATIONS.

**Sanitary Triumphs.** — In an interesting article in the June issue of the American Statistical Association's quarterly publication, we find some significant facts regarding the advantages of sanitary legislation experienced in England within the past sixteen years. In the year 1875 a general law was passed in England for the protection of the public health, known as the Public Health Act, and from that time the death rate in England has decreased for all diseases which owe their origin and growth to defective drainage and impure water supply. Typhoid fever is such a disease, and the diminution of 57 per cent in the death rate from this malady is undoubtedly the greatest triumph for sanitary reformers. During the ten years from 1856 to 1866, the annual mortality was 22.19 per thousand inhabitants; and from 1838, the first years of careful registration, to 1865, the average annual rate was about 22.35 per thousand. But for the ten years of the period 1880 to 1889, the average falls to 18.08. It seems justifiable to ascribe this diminution in the death rate to the operation of the Public Health act, and the execution of duties such as drainage, inspection of water supplies, vaccination, and others which are becoming better understood. Mr. Farr, in his Vital Statistics, estimates the value of human life in England to be about \$770 a head; that is, the value inherent in the people as a productive money-earning race. If we suppose, which is allowable if other things remain the same, that this diminution of the death rate during this last decade was due to the measures taken to that end, we find that the number of lives saved, representing a decade of 856,803 persons, according to Mr. Farr's estimate represents a social capital of \$650,000,000. Thus in ten years the country has more than regained the sum that was spent in sanitary improvements in the fifteen years, and in this calculation nothing figures for spared, grief, better health and happier life. The mortality from zymotic diseases, from 1861 to 1870, was 42.54 per 10,000 living, and this was reduced to 24.52 in the period from 1880 to 1889, but measles, diphtheria, whooping cough, appear to have escaped the influence of sanitary measures. Consumption has equally diminished in England in these last years. The mortality from this cause in the years 1861 to 1870 was 24.89 for 10,000 living. For the period 1880 to 1889, it fell to 17.36. The statistics further demonstrate that sanitary measures affect the death rate of young persons between the ages of one and twenty-five years, and especially between ten and twenty years. The gain in this latter decade, which amounts to 28 per cent., is economically a great gain. The death rate for old persons has increased during the last decade, a fact which may be chargeable to the bustle of

the nineteenth century, the wear and tear upon the nervous system, while the effect of sanitary improvements is most noticeable in the abatement of infant mortality.—*American Analyst*.

**Pronunciation of the word "Quinine."**—A friend of ours, who has been unsettled in his mental attitude about this word, in consequence of consulting the various dictionaries, has fallen into the habit of pronouncing the term differently every other time he speaks it. Others there are who resort to the subterfuge of using quinia, which is really a confession of incapacity in managing the difficulties of quinine. The Century Dictionary virtually dodges the word by giving three pronunciations. Apparently it gives preference to one which does not appear in Webster's Unabridged Dictionary at all. The latter seems to insist on the full sound of "Q" in both of its phonations. The late Mr. James Parton, in a biographical sketch of the Countess of Chinchon, the vise-regal dame of Puru, whose name is immortalized in connection with the power of the bark of the tree of the realm now lost to Spain, tries to give the true derivation of the word. "The original Peruvian word" he has found in written language to be "kina or quina, which has the sound of keena, with accent upon the first syllable, so given both by the natives and the Spaniards. Hence there is a reason for the common English pronunciation of the name, keneen. New England physicians appear to prefer the straightforward method of their own language and pronounce it as though it were an English or Latin word. The reader may take his choice, for the dictionaries sanction both." This testimony appears to settle for us the "K" sound of the initial consonant, but it would also forbid an accentuation of the final syllable. This latter usage is almost sound. In the International Dictionary of Dr. Billings preference is giving to the "Q" sound, with the accent thrown upon the final syllable. Dr. Gould's New Dictionary authorizes the same consonantal sound with the accent on the penult. So that we have from four not very widely separated centers of lexicography at least six different pronunciations of the word—enough surely to be bewildering to the inquisitive practitioner. The weight of evidence seems to favor the "K" initial sound and the accent on the final syllable.—*Editorial in Journal A. M. A.*

**Where The Noise Comes From.**—A French physician of an inquiring turn of mind has had his curiosity excited by those mysterious noises which sometimes roar around the squatorial zone of charming women, especially if she has been indulging in unlimited bonbons, and set himself about solving the problem of their origin. He thinks he has done so, and his conclusions form one more indictment against the



destroyer of the health, the grace, and the beauty of form of the gentler sex—we mean the corset. The pressure of the stays causes, he says, a constriction of the stomach dividing it into two lobes, and during respiration the gases and liquids contained in the organ pass alternately from one to the other lobe. Thus during expiration the diaphragm ascends, removing pressure from the upper lobe, while the lower lobe is compressed by the abdominal muscles. The air and fluids are thus forced into the upper lobe, and rumble and whistle as they squeeze through the constricted zone in the grasp of the corset. During inspiration the conditions are reversed, and the noisy current runs the other way. The sounds cease as soon as the stays are taken off, and reappear when they are again applied. The moral is obvious. Of course it is. —*Medical Record*.

**Salol and Arsenite of Copper in the Treatment of Infantile Diarrhoea.** Mensi (Rivista Gen. Italian Clin. Med., September 15, 1891), has treated twenty-seven cases of diarrhoea in children with salol, always with the best results. He has not been successful, however, in nine other cases treated with the arsenite of copper. In the use of these medicaments he arrives at the following conclusions: (1), Salol is an efficacious remedy in the treatment of diarrhoea in children, whether acute or chronic. (2.) Its administration is followed by an arrest of the intestinal flux, diminishing tenesmus, colicky pains, rendering normal the excrementitious matters and producing a rapid amelioration of the general system. (3), The drug is well tolerated in daily doses of from 3 to 30 grains, according to the age of the patient and the gravity of the case; it does not produce gastric irritation nor any other outward effects. (4.) Arsenite of copper is of no immediately advantage in the treatment of infantile diarrhoea, and is, on the whole, inferior to other remedies.—*Annals of Gynaecology and Paediatrics*.

**Sold His Body for Ten Dollars.**—A man who lives in a suburb of Lowell is seeking to have a deed given by him twenty years ago recovered. The deed conveyed his body to a surgeon, now practising in Great Falls, N. H., for the sum of ten dollars and other considerations, possession to be taken on his death. Since the deed was made the giver has made a fortune in South America, and has decided that he would like a Christian burial. The deed provides that the body shall be dissected and the skeleton articulated and presented to a medical university. The lawyers have decided that the deed holds good, and that the only alternative is to buy off the doctor. The giver of the deed has made a big offer, but it has been refused.—*American Druggist*.

---

REVIEWS AND BOOK NOTICES.

---

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the use of practitioners and students of medicine, by William Osler, M. D. Fellow of the Royal College of Physicians, London. Professor of medicine in the Johns Hopkins University and physician-in-chief to the Johns Hopkins Hospital, Baltimore, formerly professor of the institutes of medicine, McGill University, Montreal, and professor of clinical medicine in the university of Pennsylvania, Philadelphia. D. Appleton & Co., New York, N. Y. Cloth, \$5.50; sheep, \$6.50; half Morocco, \$7.

The fact that Dr. Osler was elected to the position of physician-in-chief to the Johns Hopkins Hospital and professor of medicine in its university at Baltimore, implying as it does one of the greatest honors that can be conferred on an American physician, and placing him at the head of the profession in this country, has caused the advent of his work on the Practice of Medicine to be awaited with much interest and considerable curiosity.

Now that, at last, it has appeared, he must be a captious critic indeed who will be disappointed with the makeup and contents of this work.

However cursory an examination be given to the work, no one can glance over this single volume of more than a thousand pages without being impressed with the vast amount of care, time, and labor which the author must have given to its production.

To give an instance of the great variety of subjects that are discussed; under the heading of Anomalies of the Urinary Secretion there are treated the following : Haematuria, Haemoglobinuria, Albuminuria, Pyuria, Chyluria, Lithuria, Oxaluria, Cystinuria, Phosphaturia, Indicanuria, Melanuria, Other Substances.

The various classes of diseases are grouped under the following headings : Specific Infectious Diseases, Constitutional Diseases, Diseases of the Digestive System, Diseases of the Respiratory System, Diseases of the Circulatory System, Diseases of the Blood and Ductless Glands, Diseases of the Kidneys, Diseases of the Nervous System, Diseases of the Muscles, The Intoxications; Sun-Stroke, Obesity, Diseases due to Animal Parasites.

The individual articles are clearly and concisely written, and a proper proportion between the pathology, symptomatology and treatment is preserved.



None of the subjects treated are encyclopædia in character, but present in a somewhat condensed form what is most necessary for students and practitioners in general to lay hold upon and remember.

All the articles are up to date, and although no chapter is devoted to the consideration of bacteriology exclusively, yet under each infectious disease are discussed the latest views concerning the particular germ which causes the malady.

The work will be found by both students and general practitioners to be more nearly applicable to their wants than most other text-books of the same character and size.

H. V. R.

THE MEDITERRANEAN SHORES OF AMERICA: OR, THE CLIMATIC, PHYSICAL, AND METEOROLOGICAL CONDITIONS OF SOUTHERN CALIFORNIA. By P. D. Remondino, M. D., Member of the American Medical Association, of the American Public Health Association, of the State Board of Health of California; Vice-President of the California State Medical Society, and of the Southern California Medical Society. Illustrated with Forty-five Engravings and Two Double-page Maps. In one handsome, Royal Octavo volume, 176 pages. Extra Cloth, price 125, net; cheaper edition, bound in paper, price, 75 cents, net. Philadelphia: The F. A. Davis Company, Publishers, 1231 Filbert street.

The yearly exodus of so many American patients to the well known Riviera and other noted European resorts, and the comparative few who seek the health giving localities of our own country, seems to indicate one or two things; either the European resorts have climates and attractions superior to ours, or else that our native localities have been comparatively little studied, and are consequently less known and appreciated by invalids than they should be.

To prove that a certain section of our vast domain, by its natural advantages simply, is not only equal to, but superior in health-giving properties to the boasted resorts of the old world, and also to show that we can compete with them in the creature comforts of this life, in new and magnificent hotels, cooking, conveniences and equipment, this book seems to have been written.

The author has made what seems to be a fairly exhaustive study of the climatology and advantages of Southern California, and has presented them to his readers in an attractive style.

Although the book abounds in statistics, he does not give them too great a prominence, but introduces them in a convincing way to

more strongly strengthen and prove his premises. The work is prettily illustrated with numerous and appropriate pictures and maps drawn from a number of sources. While the author appears to be somewhat of an enthusiast on the subject, yet he is not carried away by extremes, nor does he take a one-sided view of the question.

In publishing his book, he has certainly conferred a benefit on both physicians and laymen by familiarizing them with the beneficial and health-giving properties of an exceptionally fine climate in a section of our own country.

**BACTERIOLOGICAL DIAGNOSIS:** Tabular Aids for Use in Practical Work, by James Eisenberg, Ph. D., M. D., Vienna. Translated by Norval H. Pierce, M. D., Surgeon to the Out-Door Department of Michael Reese Hospital; Assistant to Surgical Clinic, College of Physicians and Surgeons, Chicago, Ill. Philadelphia and London: The F. A. Davis Company, Publishers, 1892. Price, \$1.50.

The fact that a second edition of these tables has been required in about a year after their publication, is pretty good evidence that the work is of value; and a perusal of its pages explains its popularity, in that it shows how much pains-taking, accurate, and careful research has been expended in its preparation.

As the book does not discuss the subject of bacteria in general, it will not appeal to the average medical practitioner, nor, indeed, is it written for him; it is directed entirely to the laboratory worker in bacteriology, and is simply a guide to the identification of well recognized species of bacteria, so that those whose position are not pretty definitely established are not admitted; it also contains a condensed but complete consideration of the technique used in the cultivation and staining of bacteria.

The author says that his classification is an arbitrary one, but at the present time, this must necessarily be so; as no fixed scientific method of classifying bacteria has been devised. The plan chosen by the author is first roughly to group all the micro-organisms under two general heads,—bacteria and fungi. The bacteria are then divided into non-pathogenic and pathogenic; the non-pathogenic are sub-divided into those which liquify and those which do not liquify gelatine; the pathogenic are sub-divided into which can be cultivated outside of the body, and those which cannot be thus cultivated.

To the practical worker in bacteriology, the book is an excellent guide and aid.



## PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets.

- Phthisis and its Dosimetric Treatment. By Dr. Adolph Burggaeve.  
New York, N. Y.,
- Treatment of Laryngeal Phthisis. By Robert Levy, M. D., Denver,  
Colorado.
- The Correlation of Cranial and Oculobulbar Conformations. By C. M.  
Culver, M. A., M. D. Albany, N. Y.
- Oxygen As a Distinct Remedy for Disease and a Life-Saving Agent in  
Extreme Cases. By A. W. Catlin, A. M., M. D., Brooklyn, N. Y.
- English Translation of Sammlung Klinischer Vortrage. By P. J.  
Eichhoff, Cure Radicale de la Hernie Sans Etranglement Chez  
la Femme.
1. Femoral and Ventral Hernia in Women. 2. The Kangaroo Suture.  
Marcy. Tenotomy by open and subcutaneous incision. By H.A.  
Wilson, M. D., Detroit, Mich.
- Fourteenth Annual Report of the Presbyterian Eye, Ear and Throat  
Charity Hospital. Baltimore, Md.
- The Indications for Colotomy. By Charles B. Kelsey, M.D., Detroit,  
Mich.
- The Therapeutic Aspect of Some Ovarian Disorders. By Edward W.  
Jenks, M. D., LL. D., Detroit, Mich.
- Report of the Calcutta Homeopathic Charitable Dispensary. Calcutta  
India. Zymosis and Pathogenesis. London, Eng.
- The Digestion and Assimilation of Fat in the Human Body. By H. C.  
Bartlett, Ph. D., F. C. S. London Eng.
- Preliminary Programme of the Forty-Third Annual Session of the Med-  
ical Association of Georgia. Columbus, Ga.
- On the Use of Creosote in the Treatment of Pulmonary Phthisis. By  
B. Beverløy Robinson, M. D., New York, City.
- Two Cases of Trephining for Traumatic Epilepsy. By Philip Coombs  
Knapp, A. M., M. D., Boston, Mass.
- College of physicians and Surgeons. Chicago, Ill.
- An Address to the Graduating Class at the Commencement of the  
Albany Medical College. By Andrew S. Draper. Albany, N.Y.
- Astasia-Abasia. By Philip Coombs Knapp, A. M., M. D. Boston, Mass.
- Accidents from the Electric Current. By Philip Coombs Knapp, A. M.,  
M. D., Boston, Mass.
- A Contribution from Brain Surgery to The Study of the Localization  
of the Sensory Centres in the Cerebral Cortex. By Philip C.  
Knapp, A. M., M. D., Boston, Mass.
- The Pathology of Hip-Joint disease, with Illustrative Cases. By H.  
Augustus Wilson, M. D., Philadelphia, Pa.
- Ideality of Medical Science. By Maurice J. Purstein, A. M., M. D.,  
New York, N. Y.

Aphasia Due to Sub-Dural Hemorrhage without External Signs of Injury. By L. Bremer, M. D., of St. Louis, Mo.  
Tobacco Insanity and Nervousness. By Dr. L. Bremer. St. Louis, Mo.

PERSONALS.

Dr. Herman C. Everts, class of '73 will be remembered as one of the most earnest students of that class and it required no great prophecy to warrant the assurance that he would without doubt make a success of his profession. Step by step he has been advanced in the different institutions with which he has been connected, and since May, 1889, has been in charge of the New York City Hospital for Insane at Central Islip, L. I. where he is doing excellent work in every respect. He writes that he has four hundred and two patients to care for, over fifty employes and attendants and two assistant physicians. It is a great pleasure for the College to hear of the success of its graduates, and among them none is more deserving than Dr. Everts. It is to be hoped he will be with us on Alumni day.

**Contagious Diseases.—Monthly Statement.**—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department of the City of Albany, for the month ending February 29, 1892:

	Cases.	Deaths.
Typhus fever.....	0	0
Typhoid fever.....	15	7
Scarlet fever.....	49	14
Cerebro-spinal meningitis.....	0	0
Measles.....	72	3
Diphtheria.....	11	5
Small-pox.....	0	0
Varicella.....	7	0

The New York correspondent of the *Medical Age* gives the following table of the proportion of physicians to inhabitants in some of the cities of this country :

	Doctors.	Inhabitants.
Albany, N. Y.....	1	to 475
New York, N. Y.....	1	to 750
St. Paul, Minn.....	1	to 800
Detroit, Mich.....	1	to 700
Boston, Mass.....	1	to 500
Chicago, Ill.....	1	to 600
Tallahassee, Fla.....	1	to 100
Washington, D. C.....	1	to 300
Bismark, N. D.....	1	to 350
Hartford, Conn.....	1	to 400
Denver, Col.....	1	to 300
San Francisco, Cal.....	1	to 475
Little Rock, Ark.....	1	to 500
Prescott, Ariz.....	1	to 500
Montgomery, Ala.....	1	to 350



THE

# Albany Medical Annals

---

VOL. XIV.

MAY, 1892.

No. 5.

---

## ON PATHOGENIC BACTERIA IN DRINKING WATER AND THE MEANS EMPLOYED FOR THEIR REMOVAL.

By THEOBALD SMITH, PH. B., M. D. OF WASHINGTON, D. C.

I BELIEVE that it will be conceded by all thoughtful persons to-day that the quality of drinking water has not kept pace with our advancing civilization and increasing fastidiousness but that it has steadily degenerated. The causes for this peculiar anomaly are not far to seek. In the first place the problem of obtaining good water has become a more and more difficult one with the growth of cities and towns. In the second place, the substitutes for water as a beverage have been growing in number so that the very class of people who are most active for good in the community, those who can spare a little energy from the struggle for existence to be applied to more altruistic ends do not see the incongruity between their fastidious table and the diluted sewage which might but perhaps rarely does grace it. Hence the efforts for better water are feeble until called forth by imminent danger and the actual presence of disease.

Yet it is idle for any one to take it for granted that he is entirely safe from the water supplied to the city of which he is a citizen. His servants will insist on drinking it and his children will some how get hold of it. His fruit and his vegetables are cleansed with it before they reach his table.

His milk may be watered with it either before or after it reaches his door. He himself may even condescend to rinse his mouth with it. I need not go any farther in pointing that even those most indifferent to the public welfare in this regard will some time or other be exposed to the dangers of an unsafe water supply.

The generally accepted belief that water is largely responsible for certain diseases, is not so very old, simply because our present methods of supplying water to large communities are comparatively recent. So are also our means of getting rid of our filth and our sewage. In olden times when water was drawn out of a well and sewage run into a cess-pool not so very far away, there was still the soil to filter out any dangerous elements which might be carried from one to the other. Now-a-days we dip our water out of the same stream into which we pour the sewage without even the filtering power of the soil to depend upon. And so the entire civilized world is quite suddenly brought face to face with a serious and pressing problem how to undo the mischief which has been wrought by ourselves and our immediate ancestors in permitting a small evil to grow unchecked into one of threatening proportions.

The growth of this evil has been so insidious, the damages done by it is so inappreciably slow in their increase that we are confronted to-day by the curious and not unexpected phenomenon of people who either deny absolutely the dangers of polluted drinking water or else look upon them as quite insignificant. And yet a little *a priori* thinking should convince us that the present conditions cannot be right, and that we are tempting Providence and defying natural laws. There are two ways of looking at sanitary problems. One is to acknowledge a certain condition as wrong but to maintain that its bad results are too insignificant to make themselves felt. The other is not only to acknowledge that something is wrong but to strike at once at the roots of the evil. This is the ounce of prevention in sanitation, the other the pound of cure.

Water, which is such an excellent vehicle and solvent that all life depends upon it as a carrier of food, is likewise an excellent vehicle for the minute vegetable and animal organisms whose object it is to destroy life. They are thrown



into the water from diseased bodies, and because they have apparently disappeared to our unaided eyes we assume that they have perished and consider the water fit for human food. To call water a food may seem somewhat strange, and yet that is what it really is. Has it ever occurred to you that it is one of the few articles which we consume in a raw state? While we bestow the greatest care upon most other foods in their preparation and largely cook them we are least careful about the water we drink even though no heat is applied to rid it of any noxious elements that may be in it. Many teachers of hygiene have hitherto dwelt in eloquent terms upon the civilizing functions of the kitchen in making food more digestible to us by applying heat, but they seem to have over-looked the important fact that heat destroys all bacteria and animal parasites and that this has been as potent a factor in man's progress as rendering food simply digestible. Here the comparative study of diseases gives us very valuable information. Many of the fatal epizootic diseases of our domesticated animals are food diseases. If it were possible or even desirable to cook their food such diseases would speedily disappear. Again these animals are all well stocked with more or less harmful parasites which enter their systems with their food. Many are carried with the drinking water in which the earliest stages of these parasites are passed lying in wait for their host to appear. There are only a small number of parasites belonging to man, and these few could be eliminated if the food, and especially the water, would be exposed to heat. The peculiar habit of eating raw pork prevails in a few small territories of the German empire. This habit which has been the cause of extensive epidemics of trichinosis in the past has made it necessary for the German government to enforce the microscopic examination of the muscles of every pig before it is sold as food. But even then it is conceded that cases occasionally escape the attention of the examiners. If this habit of eating pork raw were given up the necessity for a microscopic examination of all the pigs in the empire would at once fall to the ground. I might cite other instances of a like nature which would show that the cooking of all food that enters the body is of the highest

importance from a sanitary point of view, and that it has contributed very largely to reduce the number of diseases to which man is subject.

Like some articles of food, in a raw state, water may be dangerous to health because of the constant presence of certain low forms of life. This is true more particularly of tropical or sub-tropical countries where water seems to be always liable to produce diseases whether directly polluted or not, and where certain well-defined maladies are directly traceable to water. In our own climate, water can hardly be looked upon as dangerous in itself. It is usually made so by the hand of man. I need not dwell upon the now well-known and generally accepted fact that this danger is supposed to rest chiefly with the bacteria. Those which produce diseases of the digestive tract are the ones most likely to be in sewage-polluted drinking water. And this thus becomes a means of propagating the various kinds of epidemic diarrhœal diseases and typhoid fever. We must not forget that Asiatic cholera may be propagated by drinking water. What calamities our various water supplies would have in store for us should this fearful malady ever get a foothold among us I dread even to think of.

There are thus some infectious diseases among mankind largely due to water, which have no right to exist because they can be suppressed with means within our reach. If we intend to continue drinking water raw, we must somehow keep filth out of it, or remove it if that be possible. We have already begun to reduce infant mortality by destroying the hosts of bacteria swarming in its food during our warm seasons, and which are too powerful for the delicate, resistless tissues of infancy to cope with. Milk sterilization is now before the world and I have no doubt that in our large cities to give infants uncooked milk in mid-summer will soon be a matter of the past.

I do not wish to convey the erroneous impression that typhoid bacilli are solely carried by water. There are other more direct and more potent ways in which the disease may be transmitted, which however come rarely into play. Among these may be mentioned the infection of milk either with pol-



luted water or by reason of the existence of the disease in dairies when scrupulous cleanliness and complete isolation of the patient are not adhered to. In milk, which is a very good nutritive medium, typhoid bacilli, once introduced would multiply at the ordinary temperature. If you bear in mind, 1st, that the stools of typhoid fever contain the infection, and 2d, that the infection must be introduced into the digestive tract before it begins to arouse disease, you can readily trace the possible sources of infection both in the immediate environment of patients and at a distance from them without any more detailed statements on my part.

I believe that in this brief comparative survey I have emphasized sufficiently the fact that sewage-polluted water is from the standpoint of sanitary science an anachronism wholly out of harmony with the conceptions of hygiene to-day, that from its very nature it is fraught with unknown, if not with known, dangers, and that from an aesthetic point of view it is a nuisance. There are several objections which might be raised to this position. To some of these we have already given due consideration. It is claimed that rivers purify themselves, that typhoid bacilli do not really exist in polluted river water, and that the diseases attributable to water are traceable to other causes.

That rivers do purify themselves to a certain degree is quite true. Fortunately, bacteriology no longer permits us to speak in vague terms about self-purification. There is no simpler and more telling test than the determination of the number of bacteria. Investigations, wherever they have been made, have shown that the influx of sewage suddenly raises the number of bacteria in flowing water, and that this number depends upon the quantity of sewage and the volume of water. As we move away from the source of pollution, down the stream, there is a regular diminution in the number of bacteria until water is reached which corresponds in germ life to that found above the source of the pollution. This distance is variable, and depends on a variety of factors such as the original quantity of sewage, the volume of water, its rapidity of flow, variations in the current which permit subsidence of the bacteria and the nature of the stream.

It must therefore be determined by actual examination for each particular body of water. While in some instances eight or ten miles have been found sufficient in others such as the Seine below Paris seventy miles are required. What becomes of the bacteria we are unable to say definitely. We know that they settle to the bottom quite rapidly when the current is sluggish and they probably perish sooner or latter, according to their power of resistance.

In polluted streams containing from 2,000 to 100,000 bacteria in a cubic centimeter typhoid bacilli are likely to be present at all times, since this disease is always present in large communities. It is likely to be always present in communities drinking this water from which the traces of sewage in the shape of sewage bacteria have not entirely departed. Occasionally through some momentum a focus of disease appears in some community which furnishes an increasing number of typhoid germs to the communities below. The disease grows like the avalanche on the mountain side, started by the wings of some bird high up. The records of typhoid epidemics manifestly produced by impure drinking water have grown rapidly within the past eight or ten years.

Near the close of 1890 there appeared quite suddenly in Florence a severe epidemic of typhoid fever which included a narrow section passing through the city from north-west to south-east, and corresponding exactly with the distribution of water from filter galleries which collected it from a certain stream. The epidemic was noteworthy in that it attacked the wealthy and spared the poorer classes who had to take their water from wells. It disappeared when the use of this water was suspended. The filtered water was turbid after rains indicating contamination from surface water and perhaps incomplete filtration. The bacteriological examination of the water was undertaken near the close of the epidemic. Typhoid bacilli were not found, but the number of bacteria rose as high as 2,000 in a cubic centimeter.

Another noteworthy epidemic occurred in Pisa near the close of 1890. The number of cases of typhoid rose from thirteen in October, to 1,000 and 1,313 in November and December. In January of 1891, it had fallen to 111, in Feb-



ruary to thirty-four. The drinking water was at once suspected as the vehicle of the disease germs. It was obtained from springs. The conduit was defective, but worst of all, laundries were found situated above the springs in which the linen of the city was being washed. Sormanni claimed to have found in this water typhoid bacilli.

A third epidemic which appeared in Berlin, in 1889, I shall describe farther on in connection with the subject of water filtration. I might cite other instances similar to those just quoted, but I consider it hardly necessary. One positive illustration is worth more than all the negative and doubtful ones which can be brought to oppose it.

The potency of the virus of typhoid fever is made painfully clear in some epidemics which have been traced to single cases of disease along streams used as sources of drinking water. In such cases the great negligence of those about the patient has always assisted in making every single bacillus do its deadly work farther down the stream. In November, of 1890, in Lowell, Mass., which takes its water from the Merrimack, there was an unusual number of deaths from typhoid. This increase appeared about three weeks after the contamination, with stools, from cases of typhoid fever, of a small tributary stream three miles above the intake of the Lowell water-works. Nine miles below the point where the sewage of Lowell is discharged into the river the city of Lawrence takes its water. Six weeks after the appearance of typhoid in Lowell, an alarming increase of deaths from the same disease was observed in Lawrence. About this time the typhoid bacillus was found in water from the service pipes in the latter city.

The few illustrations I have cited will I think answer the various objections noted. A thorough discussion of the presence of the typhoid bacillus in water would lead us beyond the theme of the lecture. A few facts bearing upon this subject cannot well be passed over, however. A certain bacillus always found in the organs of persons who have succumbed to typhoid fever is now recognized the world over as the cause and the only cause of this disease. I do not now intend to convey the impression that there are not predisposing con-

ditions which favor this bacillus in its entrance into the digestive tract and its morbid action on the various organs, while the specific germ may be taken into the stomach by 100 persons, the disease may only appear, say in twenty-five. But if this germ had not been in the water, the disease would not have appeared in any one of the 100 persons.\* Now this bacillus has been reported present in drinking water during epidemics many times but I am inclined to throw out the evidence in fully half these cases. Enough remain to demonstrate its presence in water at certain times. Reliable observers claim that in extensively polluted streams in the vicinity of large cities such as the Seine near Paris, typhoid bacilli are present at all times. On the other hand, these bacilli have been sought in vain by many accredited observers under the same favorable conditions. Such negative evidence cannot be seriously considered, however, because of the difficulties encountered in the search for these bacteria. The bacteriologist has, first of all, to contend with a very large number of bacteria in polluted water. Sewage is, literally speaking, the home of bacteria. If we take 2,000 bacteria in a cubic centimeter—and this is a low estimate for sewage-polluted water—there will be half a million in a glass of water. There may be only a few typhoid bacilli among this half a million. Again, in those tests which eliminate most of these miscellaneous bacteria, the real sewage bacteria, those whose habitat is the intestinal tract, will appear in our cultures and on our plates where we hope to find typhoid germs. The large number of the former is a decided hindrance to the success of the search. You will readily understand from these statements that the reason why typhoid germs are not more frequently found where our theory must suppose them to be, is not that they are absent, but that we have looked neither long nor sharply enough nor at the proper time.

How shall the dangerous elements be removed from our drinking water? The answer to this question involves a consideration of those devices which are applicable to the needs of single households and those which are used in connection with public water supplies. For the family the cheapest



and simplest method is to boil the water. This is within the reach of all, even the poorest. It is fortunate that pathogenic bacteria are readily destroyed by heat so that bringing the water merely to the boiling point is sufficient. The objection that water loses much of its agreeable taste by boiling is, I think, perhaps more imaginary than real. How our river water could lose very much by any process it is difficult to realize. In a household of limited means, perfect immunity from any dangers in the water may be secured by boiling. And for at least seven months in the year, such water, placed in glass jars out of doors, will be sufficiently cool to be agreeable. To remove any suspended matter like fine clay particles it is necessary to resort to some kind of filtration. If the water be previously boiled and then allowed to filter through an ordinary stone filter, it will not only be deprived of any cloudiness, but will absorb more or less of the gases lost in boiling. The stone filter is not capable of removing all bacteria, and hence cannot, by itself, be regarded as safe. The boiling must be relied on to destroy all bacteria coming from a suspected supply while the filter makes it more palatable and pleasing to the eye. During the filtration, especially if it goes on in a warm room, bacteria from the air and the inside of the filter will again infect the water and multiply in it. These, however, are quite invariably harmless and their presence may be disregarded. To obtain water nearly free from bacteria it may be filtered first, then boiled and kept in the cold in glass jars or bottles until used.

A complete removal of bacteria is possible with the filter known as the Pasteur-Chamberland system. The water passes through the walls of a tube consisting of unglazed porcelain and in so doing is deprived of all bacteria, at least for a time. A certain head or pressure is required to force the water through, but this is usually obtainable from most water supplies. As there is some expense connected with this filter both in the purchase and the plumbing necessary to put it in place I have mentioned it last since it is not an absolute necessity in a household, but only a convenience. The ordinary domestic sand and charcoal filters can no longer be recom-

mended as safe appliances unless the filtered water be boiled subsequently. The reasons therefor will be evident in the discussion of sand filters on a large scale.

Water filtration has in recent years gained a great ally in bacteriology. If this study has been of no other use than to enable us to count bacteria in water it would have, to use a current expression, paid for itself. That every minute organisms are the cause of infectious diseases had been suspected many years before bacteriology came to demonstrate it before our eyes. That they are the dangerous elements in polluted drinking water was the next step in our knowledge. Before the advent of bacteriology all were absolutely in the dark concerning the action of filters in removing these low organisms. Now we have a ready method of determining their number before and after filtration, and thus we know precisely what a filter is capable of doing, from a sanitary point of view.

The filtration and purification of water on a large scale is accomplished with the aid of fine sand chiefly. That sand and earth are excellent filters must have been suggested to man by the limpidity of well water and spring water, which percolates through the soil. The perfect filter, which the soil in reality is, was not realized until the experiments of Fränkel and others demonstrated that ground water is entirely free from bacteria. Those which are found in wells and springs get in somehow from the surface, or through cracks and fissures of the ground, from cess-pools or other subterranean collections of organic debris.

This perfect filtration of the soil is the more astonishing when we look at the condition of the soil itself with reference to bacteria. The upper two to three feet contains an immense number, on an average 100,000 in a cubic centimeter. As we go deeper they rapidly diminish in number, and at a depth of four or six feet the earth is practically free from all living organisms which respond to our tests. The water therefore in percolating downward from the surface encounters a host of bacteria in the superficial layers which are all removed by the deeper layers. It is not surprising therefore that earth in



the shape of fine sand should have been selected as a filter for water on a large scale.

It is not my intention to go into any detailed description of sand filters. This must be left to competent engineers. I simply wish to call your attention to their workings as sanitary agents, their capacities and deficiencies. In this I am greatly aided by the careful observations and the exhaustive statistical tables published by those in charge of the sand filters of Berlin, Germany, since 1885. Some very interesting features of these filters have been worked out at the same time with the aid of bacteriology which tend to revolutionize our conceptions of how filtration is accomplished. I shall also refer briefly to the elaborate experiments conducted by the State Board of Health of Massachusetts, on the intermittent filtration of sewage and drinking water.

A filter bed consists, as a rule, of a square or rectangular space surrounded by masonry and made water-tight by layers of clay and concrete. On such a bed the filtering material rests. This consists of a layer of fine sand from two to three feet in thickness, resting upon a layer of gravel of increasing coarseness, which in turn rests upon a bed of small stones or very coarse gravel. The filtering is done only by the sand; the gravel and stones form, as it were, a support for the sand. By a judicious selection in the size of the material used each layer is prevented from washing down through the layer directly beneath it. In most filter beds the water is collected by perforated canals running along the bottom of the bed in different directions. The beds of stone and gravel rest upon and between them. In some places the entire filtering material, including gravel, etc., is supported over basins into which the water trickles directly after it has passed through the sand and gravel. The water to be filtered is allowed to flow upon the sand until a certain depth is reached. The pressure thus produced forces it through the fine pores of the sand until it reaches the bed of gravel and stones. It trickles through this and reaches the canals embedded in these layers. Within these it is carried to a reservoir, and lastly into the mains for distribution.

This process of continuous filtration is designed to remove

the bacteria from the water. This, we must bear in mind, is the only object of filtration as we look upon it now-a-days. We know that waters contain in addition to bacteria and other organic life various inorganic salts, the most prominent among which are chlorides, lime salts, free and albuminoid ammonia and nitrites. But filtration removes only a small percentage of these substances and their presence is harmless. The study of filtration must therefore be directed largely to its behavior towards the bacteria and this phase alone I shall consider.

When water is passed through a layer of clean sand it loses but little of its germ life and the cleaner the sand the more bacteria will pass through, paradoxical as it may seem. After the filter is in operation for a time, its power to hold back the bacteria increases until a time is reached when it may be regarded as at its maximum efficiency and it is capable of removing ninety-nine percent of all the bacteria. The cause of this curious action is found in the formation on the surface of the bed of sand of a thin layer of ooze or mud deposited from the unfiltered water. This layer has pores so fine that it forms the effective part of the filter-bed. When the filter is new or recently cleaned this slimy layer is absent and the filtration is more or less imperfect. To remedy this defect engineers have resorted to the device of allowing the unfiltered water to rest upon the bed quietly for a day or longer until a thin deposit has formed. If the important part of the filter-bed consists in its covering of dirt and ooze, it is evident that the thickness of the bed under ordinary circumstances is beyond a certain point of but little service and hence there is considerable latitude in this respect in different localities. If the surface ooze and the sand beneath it be examined bacteriologically it will be found that the greatest number of bacteria is at the surface in this ooze and that they diminish in number very rapidly as we pass toward the lower surface of the sand. It might almost be said that the bacteria themselves hold their fellows back and the more there are, the more thorough the blockade becomes.

This surface deposit brings another factor into play, namely the pressure required to force the water through the



sand. The spaces between the particles of sand or the pores constitute roughly about one-third of the volume of the bed. A certain pressure is required to force the water along these pores and this increases with the fineness of the sand. If, therefore, it is desired to obtain from a given filter a certain quantity of water per hour it becomes necessary to find out what pressure or in other words what depth of water in the filter-beds is necessary to obtain it. For clean sand this pressure is easily determined. As the layer of mud on the surface forms and continues to grow in density more and more pressure is required to force the water through. Lastly this becomes so great that the filter can be operated no longer. It is cut off from the other parts of the plant and the water drained away. A thin layer is scraped from the surface to expose the clean sand when it is once more ready for work. The filter-bed is always flooded from below upwards by admitting water already filtered from the reservoir connected with the plant. The unfiltered water is then turned on and the whole allowed to rest for one or more days until a thin surface film has been formed by deposit from the unfiltered water. At intervals of a year or longer when the repeated scraping of the surface has reduced the thickness of the layer of sand by a third or more, washed sand is added to bring it back to the standard thickness.

It follows from these considerations that the muddier the water to be filtered the more costly the process will be because the clogging will be more rapid and more time will be lost by reason of the more frequent cleaning demanded by it. An occasional enemy are the algæ, which, strained from the unfiltered water, are said to multiply on the surface of the filter. Rapid clogging and frequent cleaning are the result. In northern latitudes, with severe winters, it may become necessary to protect the filter beds from frosts by arching them over permanently. This, of course, very materially increases the original cost of the plant. Experience has shown, however, that such protected filters are the safest and most serviceable in the end.

As a means of removing suspended particles, including bacteria, from water a sand filter must be regarded as a very

satisfactory instrument, when properly handled. In order to give the best results it must not be worked with too great rapidity, for this demands a proportionate increase of pressure, which, in turn, is apt to drive the masses of bacteria found in the surface film deeper into the bed of sand, whence they may gradually work their way through the entire layer. The increasing resistance offered to the water by the surface film demands a gradual increase of pressure, but this must be carefully watched and regulated and not allowed to go beyond a certain degree before the filter is cleaned. The slower the filtration, therefore, the more perfect the result. This principle, on the surface, seems directly opposed to economy in the matter of expense and the tendency would always be to violate this law, especially in case of accidents to filter bed or when the consumption of water is very great and exceeds the regular supply. Experiments have shown, however, that the yield of any filter worked with a low pressure is in the end greater than that of a filter worked with double the pressure and furnishing at first twice the quantity. In the latter case, the filter becomes clogged so much more rapidly and has to be cleaned so much oftener that besides the uncertainty of the result the loss of time makes the expense the same in the end. Another thing to be avoided is sudden fluctuation of the pressure. If the yield of any given filter must be increased the pressure should be raised very gradually for any sudden rise is liable to disturb the surface film and make the filtration imperfect. These general rules depend to a certain degree upon the condition of the water to be filtered. Experience has shown that water containing from 1,000 to 10,000 bacteria in a cubic centimeter may be filtered more rapidly than one containing from 10,000 to 100,000 in the same quantity if the same final result is to be obtained in both cases.

Let us now inquire briefly as to the quality of the filtered water. In the Berlin plants which filter a very impure water—that of the river Spree now containing rarely below 10,000 bacteria in a cubic centimeter, and occasionally rising to 100,000—150 bacteria in a cubic centimeter, is considered as a satisfactory average in the filtrate. The entire number is not



supposed to pass 300 as a limit. This is a very fair reduction and brings the number within the limit usually found for the ordinary non-polluted water of streams. It is a curious fact that when water containing comparatively few bacteria is filtered the reduction in number is not proportionately great. This has been explained by assuming that in the filter bed a certain number of harmless bacteria are found in all its layers and some are being constantly given off from its lower surface and from the walls of the canals to the filtrate. A further equalization is due to accessions to the filtered water in the distributing mains. The walls of pipes in dead ends and joints are apt to give shelter to organic life and furnish their quota of harmless water bacteria to the current flowing by them. The final and most important question concerns the character of the bacteria in the filtered water. Can bacteria and more particularly pathogenic forms pass through such filter beds as have been described? We may safely assume that many of the bacteria found in the filtered water are derived from harmless species vegetating in the lowest layers of the filter and in the pipes. But are there not some in the filtrate which have come directly from the upper service? Experimental science has answered this question to our satisfaction. The Massachusetts Board have shown that in intermittent filters a very small percentage of bacteria may find their way into the filtrate. For continuous filtration we have also positive evidence.

In the year 1889 Berlin was visited by an epidemic of typhoid of quite unusual severity. In January sixty-four cases were reported, of which fifteen belonged to the preceding December; in February, 271; in March, 258, and in April ninety-five cases were reported. The marked increase in February and March indicated the presence of some focus whence the germs of the disease were being distributed over the city. That this focus was the filtered river water was made manifest by the localization of the epidemic. A thorough comprehension of this fact necessitates the statement of a few preliminary details.

Berlin has two filter stations in opposite parts of the city.

One takes its supply from the germ-laden river Spree, the other from a lake which contains much purer water. The filtered water from these stations passes into mains which approach each other, and the two kinds of water finally mingle. Hence there are sections supplied only with filtered river water, certain others which receive only the filtered lake water, and a third territory to which mixed water is supplied. These several territories are easily controlled by chemical examinations. The river water contains much more chlorine than the lake water. Hence an examination for chlorine in any section of the city would determine whether the water supplied came from one or the other source, or from both. Inquiry revealed the fact that the district supplied by the lake water was free from disease. The epidemic was restricted to the district supplied by the river water and shaded off into that supplied by the mixed water.

That the filtered river water was the source of the epidemic was furthermore made highly probable by the manner in which the filter beds had to be worked during the winter. Owing to the constant presence of ice on the open filters, they could not be cleaned at the proper time and became practically unworkable, yet the filtration was kept up to a certain extent, while the few covered filters were forced by an unusual pressure to make up the deficiency as far as possible. According to the principles to which I have already referred, this state of affairs could not but be injurious to the process itself. To add to unfavorable circumstances the unfiltered river water contained at times as many as 100,000 bacteria in a cubic centimeter. The bacteriological examination of the filtered water indicated, as might have been expected, a rise of bacteria from 100 to 3,000, and even 4,000, in a cubic centimeter.

There was sufficient reason, therefore, to suspect the water supply, but the suspicion could not be confirmed until it could be shown that disease germs themselves can survive long enough to pass through the filter beds. Hitherto it has been assumed that, while ordinary water bacteria might slowly work or grow through the sand, this was quite out of the question for the disease-producing varieties. A solution



could only be reached experimentally, and this was attempted, at the suggestion of Prof. Koch, by one of his pupils, Carl Fränkel, and the engineer of the filter works, Piefke. Small filters were constructed by imitating, as closely as possible, the actual working filters. Through these water was allowed to pass to which various known bacteria has been added, including the bacilli of typhoid and Asiatic cholera. The unfiltered and the filtered water were subjected to daily examination and a watch kept for the appearance of the known bacteria in the filtrate. In all cases these passed through the filter, and were recognized by bacteriological tests in the filtered water, in one or more days after they had been added to the unfiltered water. The conclusion was, therefore, reached that even when the operation of continuous filtration is guided by skillful hands, with due consideration of the laws governing them as determined by bacteriology, it cannot be relied upon to absolutely guarantee the removal of all infectious agents. It was also suggested that some of our less fastidious pathogenic bacteria, such as typhoid bacilli, may at times even multiply in the rich organic debris of the sand filters during the warm season. That this is possible cannot be denied, but I am inclined to believe that in the miscellaneous debris on and in the filter there are present as many agents which are injurious as those which are favorable to the multiplication of these disease germs.

The study of continuous filtration has thus furnished us with the following important data:

1. Sand filters, under certain conditions, will greatly reduce the number of bacteria in water. These conditions are slow filtration and moderate and steady pressure of the column of water on the filter surface.

2. Very clean, sterilized sand is a poor filter. It is necessary for a film of fine mud and organic debris to form on the surface and fill the pores of the uppermost layer of sand to make it efficient. The thicker this film the greater the resistance and the slower the filtration.

3. Bacteria are most numerous at the surface of the filter bed and rapidly decrease towards the lower surface where they are least abundant.

4. The number of bacteria in filtered water increases with the rapidity of filtration and the pollution of the water to be filtered. It is usually high at the beginning and at the end of a period (when cleansing becomes necessary).

5. Pathogenic bacteria may pass through sand filters.

Before proceeding I cannot but emphasize an important lesson which this Berlin calamity inculcates. The readiness with which the authorities in charge of the filter stations co-operated in testing the efficiency of the sand filtration and the frankness with which they acknowledge its defects may well serve as a model to be imitated by communities nearer home. To acknowledge and publish facts of this nature is a somewhat rare virtue among mankind. But it is the only road of progress, the only one out of threatening difficulties in all the phases of our public life.

I have thus far limited myself to a statement of what continuous filtration is and what it may accomplish. There is, however, another kind of known intermittent filtration to which the work of the State Board of Health of Massachusetts, since 1887, has been directed in an investigation of the purification of sewage. The results of this work have already been presented to you by Dr. Van Rensselaer in a recent number of *THE MEDICAL ANNALS*, and I shall therefore only touch upon it to compare it with continuous filtration already described. The process as carried on at the Lawrence station in Massachusetts, consists in pouring sewage upon a deep layer of sand and other porous material at intervals. The sewage as it passes into the pores of the filter comes in contact with air drawn in during the intervals as well as with certain kinds of bacteria which have established themselves around the particles of sand. In its passage through this layer the sewage undergoes profound changes leading to an oxidation of the organic matter and the destruction of nearly all the bacteria, so that the water leaving the filter below is purer than most unpolluted surface water. The filter seems to act as an organism which slowly reaches its maturity. Its capacity is limited and efficiency impaired when too much sewage is added. It is imperfect at first, but after months of action, grows more and more efficient. It requires no cleaning. In fact cleaning



would destroy its integrity. Such are in brief the interesting facts brought out in the study of intermittent filtration. It will be observed at once that it is wholly different in action from continuous filtration. In the latter there is no nitrification or oxidation of organic matter because the filter pores are always full of water, and the rapidity with which the water passes through allows no time for any chemical action to take place. Again, in continuous filtration, the important factor is the surface layer of deposit which seems to hold back mechanically most of the suspended elements, while in intermittent filtration the pores and their germ life are the vital organs of the filter. That intermittent filtration is, theoretically, the most perfect purifier of water must be accepted. For it not only removes the dangerous living elements of polluted water, but it likewise largely transforms organic substances held in solution. But is it economically feasible? This is, after all, the vital point. Perfection in most things is not such an impossibility if we can only give the time and pay the money demanded by it.

We have already seen that continuous filtration becomes more and more perfect the more slowly it goes on. Intermittent filtration is, from its very nature, slow, because the water is allowed to take its own time in finding its way through the pores of the filter. In continuous filtration there is a continuous pressure, varying according to the condition of the filter and the quantity of filtered water desired. I have roughly calculated that at a medium rapidity of filtration, which is estimated at four inches per hour by the Berlin authorities, filter beds including an area of one acre yield about two and one-half million gallons of water per day. The yield of the intermittent filters may, of course, be increased or diminished, but unless they lose the character of intermittent filters their yield is much less, and may be put down, according to the results thus far obtained at the Lawrence station, at half a million gallons per acre. If, therefore, we should reduce the yield of continuous filtration to two inches per hour, which is considered a very safe rate, it would still require twice the area for intermittent filtration to furnish the same quantity of water.

According to more recent experiments at the Lawrence station, the intermittent process may be pushed to yield one million gallons per acre per day and still remove 99.7 per cent. of all bacteria. This is a very good showing and corresponds to a rapidity of about two inches per hour in the continuous process. We must of course bear in mind that the quantity of suspended mud in the water, other things being equal, will have more or less influence on the rapidity of filtration.

The choice of a process would be, on the whole, in favor of the intermittent method as the most certain in the removal of bacteria. So far as I am informed at present, the two methods seem to shade into one another. By increasing the yield of the intermittent filter, we thereby impair its efficiency. Similarly by diminishing the yield of the continuous filter, its efficiency is greatly increased. While there still remain to be solved a number of problems relating rather to detail than to principle, it is safe to lay down the general rule that filtration may be made nearly or quite perfect by either method, provided it is sufficiently slow. What ever changes and improvements the future may bring, they will probably not be radical, and can easily be adopted without an abandoning of the original plant or even any great changes in it.

I wish to refer lastly to a third method of reducing the possible dangers in our water supplies—a method which has not been urged or discussed to any extent but which I am inclined to believe may tide over the difficulties arising during a period when the present water supplies are looked upon with grave suspicion but no better are in sight. It is a well known fact to-day that bacteria obeying the same laws that govern other particles of matter rapidly sink to the bottom in stagnating or slowly flowing water.

If water is stored in large reservoirs this tendency of bacteria to subside would considerably reduce the number of those which cannot multiply in water, and any pathogenic species would be eliminated after a time. We have no reason to believe that even the most polluted water, which is still acceptable as a beverage, is of sufficient nutritive value to favor the multiplication of any pathogenic species. There is



much in favor of the theory that many of the calamities which have been traced, more or less directly, to the water of polluted streams are due to the fact that too little time elapses from the moment it is taken from the stream to its distribution and use. Such calamities generally have arisen, when there was a scarcity of water, from other less suspicious sources, as in Vienna in 1877, when water from the Danube river was distributed to certain sections of the city because frosts had interfered with the supply from springs in mountain reservoirs. This was followed by a most disastrous epidemic of typhoid.

There are, on the other hand, objections to storing water, rich in organic matter, in solution, because algæ are apt to grow in it in great luxuriance in the summer months, and impart to the water a very disagreeable, fishy taste. It is not an easy matter, therefore, to steer safely between the Scylla of pathogenic bacteria on the one side and the Charybdis of algæ on the other. I am also well aware that this method demands large reservoirs, which are necessarily costly. Yet it seems to me that some means should be devised by which sewage-polluted water may be withheld for a time from distribution, until sedimentation and the struggle for existence between the hardy water bacteria and the more delicate disease germs shall have decided the fate of the latter.

In conclusion, I may be pardoned for pointing to one other lesson taught by the investigations from which I have so freely drawn, and that is the desirability and importance, yes, the necessity, of a current scientific record in public works. Since 1885 the filtered and unfiltered water of Berlin has been subjected to periodic examinations, both chemical and bacteriological, forming an invaluable record, from which even we, at this distance, may draw vital lessons. The same may be said of the experimental records of the Massachusetts station. Thousands of dollars might be saved by communities annually, over and above the cost of establishing science laboratories, if only past records could be consulted to explain mysteries and tell us what to do next. The future can only be prognosticated by what has occurred in the past, and as we are keeping daily records of the meteorological conditions

over the whole country, to guide the weather prophet to-day and in the distant future, so should every community have records of the condition of its most important food—its drinking water—which should be continually and promptly readjusted to the increasing accuracy and comprehensiveness of advancing science.

But there is this difficulty that we all as individual taxpayers have opinions of our own and place too little reliance upon the opinions and testimonies and the laborious investigations of those specially trained. Experts frequently make mistakes and blunders and this is to be expected now and then since every problem which arises, presents new and unknown conditions and since we of all highly civilized nations are giving our scientists the least opportunity for testing theories on a small scale by patient work in the laboratory and in the experiment station before we plunge into the abyss of large public expenditures. If we as citizens take everything into our own hands and wait to be educated up to a certain level ourselves before we undertake the serious study of important sanitary problems, the conditions meanwhile will have grown more and more complex and the world at large will have taken another stride ahead by the time that we have decided to act.

As among men so among communities, there is a struggle for existence and only the fittest will survive. If our sanitary conditions are suspicious, strangers will turn away. Already the wave of discussion concerning the drinking water of Chicago has reached Europe and appeared in a prominent British medical journal. And the effect of such discussion cannot be foretold. It will undoubtedly grow like the story of the three black crows, but the more's the pity that there should be a grain of truth in it. The sooner we recognize the fact that a community is a true organism, body, which to survive the struggle for existence and flourish must be sound and well in all its parts, the sooner will our sanitary problems be solved.



# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—No. 5.

MAY, 1892.

\$1.00 A YEAR.

---

## MEETINGS OF MEDICAL SOCIETIES.

The meeting of the AMERICAN SURGICAL ASSOCIATION will occur in Boston, Mass., Tuesday morning, May 31, and June 1 and 2, 1892, at the hall of the Natural History Society on Berkeley street.

The AMERICAN MEDICAL ASSOCIATION will meet at Detroit, Mich., from June 7 to 10, 1892.

The meeting of the ONTARIO MEDICAL ASSOCIATION will take place at Toronto about the middle of June.

## INTERNATIONAL PERIODICAL CONGRESS OF GYNAECOLOGY AND OBSTETRICS.

The following named distinguished gentlemen have been delegated to represent the British Gynaecological Society at the International Congress of Gynaecology and Obstetrics, next September: Robert Barnes, A. S. Simpson, Granville Bantock, Lawson Tait.

Great preparations are being made to entertain visiting physicians. His Majesty, King Leopold will assist at the opening of the Congress. There will be a grand reception by the Belgian Gynaecological Society; gala performance at the Grand Opera; also a banquet by the British Gynaecological Society; garden party in the gardens of the Royal Family, etc.

For all information relating to the congress, address,

DR. F. HENROTIN,

American Secretary,

353 Lasalle avenue., Chicago, Ill.

## ANNOTATIONS.

**“The More Creasote the Patient Can Tolerate, the Greater the Benefit.”**—Sommerbrodt relates in the Berl. Klin. Woch. his further experience in the use of creasote against tuberculosis. In his earlier report he said that eight minims a day would cure every case if taken in the beginning; he is now convinced that larger doses up to twenty-five to sixty minims a day will cure even severe and advanced cases. He does not, of course, claim to cure every case; but he is positive that large doses of creasote will do more for many tubercular patients than any other drug, and his motto is “The more creasote that can be borne, the better.” The maximal doses given in the pharmacopoeias are much too small, according to him; he begins at ten years of age with fifteen minims daily, and increases this to sixty. He formerly gave it in capsules, with balsam of tulu; but this method he abandoned as soon as he discovered that very often the balsam was not absorbed, but passed by the bowel undigested. He now gives it in capsules, mixed either with cod liver oil or olive oil. Sommerbrodt claims that creasote, if its use is persisted in for years, will allow people who cannot get away to remain at home in comparative comfort. No fear need be felt of a bad effect upon the stomach, as Sommerbrodt has given patients as high as 200,000 capsules without affecting the appetite injuriously; the most that was noted was a slight belching during the first week, which soon disappeared.—*Saillard's Medical Journal*.

**Public Baths in Boston.**—The Boston Medical and Surgical Journal states that a company, to be known as the Boston Bath-house Company, is soon to be incorporated to establish baths for the poor of Boston, following the steps of the chief European cities and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston, where, during the first year, 3,000 men, women and children made use of it. It is hoped that after the baths are established they will be self-supporting. About \$40,000 are needed for the establishment of the institution.—*Medical Record*.

**A Palatable Laxative.**—Make a strong concentrated infusion of senna leaves; strain this through a muslin cloth and boil in the strained liquid as many prunes of good quality as can be well boiled in the quantity of infusion. Stew the prunes in the liquor thoroughly, in the same manner as if for the table, properly seasoning. When well cooked put in a glass jar, screw the top down tightly and set in.



a cool place. Two or three or four of these prunes eaten during the day will overcome some of the severest cases of constipation. There is no suggestion whatever of the senna in the taste of the prunes, and the effect is most desirable. If taken at bed-time, when a laxative is desired, the bowels will move nicely in the morning. They can be taken on the most sensitive stomach and when other laxatives would produce undesirable results.— *Chicago Medical Times*.

**Lawson Tait on the "Corpus Luteum of Pregnancy."**—Writing to the *Lancet* on January 2, 1892, on this subject, Dr. Tait asserts with characteristic energy:

I am perfectly confident that I have made sections of more ovaries, concerning the actual history of which the facts were known, than any man alive. I have only to say that my conclusions, long ago made and confirmed by every investigation which I have made, is that the belief that the corpus luteum is not altered in any way by pregnancy, or that there is such a thing as a true corpus luteum or a false corpus luteum in relation to the fact of pregnancy, is one of the most extraordinary crazes which has crept into medical belief, and it has been productive of a very large amount of mischief. It is one of those assertions which has been made in the early investigation of ovular physiology and pathology, based on the assumption that ovulation is a monthly occurrence, and it has been handed down from writer to writer without any kind of substantiating proof, whilst the negative evidence against it is perfectly overwhelming.— *Kansas Medical Journal*.

**Lancaster S. M., on the Preservation of Hypodermic-Syringe Needles.**—Having noticed, in various medical journals different plans of preserving hypodermic needles from rust or at least from occlusion, I have thought that a means that has been in use by myself for the last twelve or fifteen months might be of use to the profession generally. Accidentally I found that, if the needle head was filled with unguentum petrolei and then screwed on to the barrel, the needle would be filled with the ointment, and perfectly preserved for an unlimited time. All that is necessary to do when you want to use the needle is to fill the barrel with water and force out the contents of the needle, or, in case you should forget to do so, or are in a hurry, you may disregard the needle-filling and proceed with the injection, as no harm can come from the subcutaneous injection of so small an amount of ointment. I have used this method of preservation for small and large needles, have no use for the little brass plungers that accompany

the needle, and have saved a great deal of time, possibly two or three lives, and quite a considerable amount of bad humor. If some one would construct a small bottle with a screw cap to which a small spoon was attached for filling the needle-bed, to accompany hypodermic syringes, the outfit would be complete.—*New York Medical Journal*.

**Sanson A. E., on Difficulties in Disease of the Aortic Valves.**—The group of cases of uncomplicated aortic insufficiency is to that of aortic insufficiency, plus mitral stenosis, as 88 to 39. But from the existence of the usual "aortic diastolic" murmur and of a presystolic thrill or murmur or both, the presence of the two lesions cannot be inferred. Several cases are cited in which a presystolic murmur was present, but in which aortic insufficiency was proved, and mitral stenosis disproved, by post-mortem evidence. The differentiation between the two lesions in exceptional cases requires careful consideration of all the physical signs, and the evidence afforded by the cardiograph is of high importance. A case is reported in which from the clinical evidence it seemed probable that there was a conjunction of the two lesions, the mitral stenosis being slight. The autopsy showed aortic insufficiency; no mitral stenosis. Two explanations are possible: (a) the lifting force of the current of blood impinging on the under surface of the mitral curtain might so obstruct the current from the auricle as to create an impediment at the end of each diastole, or (b) the vibrations might be directly communicated by the regurgitant stream from the aorta to the mitral curtain.

A case is also reported in which the murmurs of aortic and mitral stenosis were present. The autopsy showed mitral stenosis, the thickened, calcareous material about the mitral orifice projecting so far into the conus of the ventricle as to constitute a real obstruction, although the aortic valves were normal.—*Liverpool Medico-Chirurg Journal*.

**The Treatment of Typhoid Fever.**—Dr. Sicard, after discussing the inconveniences and dangers in the use of salicylate of bismuth, charcoal, iodoform, naphthalin, and B-naphthol as intestinal antiseptics, in the *Revue de Therapeutique Medico-chirurgicale* for 1891, No. 17, page 458, recommends salol in daily doses, from fifteen to forty-five grains. Calomel, given in fractional doses, following the method of Bouchard, although diminishing the mortality, yet gives rise to a long convalescence. He believes chloroform in small doses to be one of the most useful and least dangerous of all. Used by Desprez in 1867, in



cholera, and by Stepp in 1888 in gastric ulcer and in typhoid fever, the author administers it in five-drop doses, thrice daily. This dose is dissolved in one thousand parts of water. He further insists that large quantities of fluids shall be prescribed in small doses, frequently repeated, up to six or seven quarts per day; two quarts of milk, one quart of bouillion, in addition to water in which sugar-of-milk is dissolved. The amount of urine passed is frequently five or six quarts daily. This treatment not only favors the elimination of toxic matters, but restores to the organism the water lost through the lungs and skin.—*The American Journal of the Medical Society.*

**Ergot for Hypodermatic Use.**—In the *Therapeutische Monatshefte* for 1891, Heft, 7, S. 369. Dr. Biedert gives us a method for using ergotin subcutaneously without danger of producing either indurations or abscesses. He dissolves the extract of ergot in a two per cent. watery solution of carbolic acid. In the intervals between the injections the syringe remains filled with a three to five per cent. solution of carbolic acid, the needles being kept in a similar solution. At the time of the injection the site selected is cleansed with cotton moistened with the carbolic solution, and the point of puncture covered by a second pledget of cotton dipped in the same solution.—*The American Journal of the Medical Science.*

**Palatable Castor Oil.**—As the result of a series of experiments, Staadke (*Deutsche medicin, Worehenschr*, 1892, No. 4, P. 871) believes that he has succeeded in removing the nauseous taste of castor oil. The best castor oil is repeatedly treated with hot water, then sweetened with sufficient saccharin to possess a syrupy taste. Minute quantities of the aldehyde of cinnamon oil and of vanilla flavoring suffice to completely cover whatever disagreeableness of taste remains. Oil so prepared has been found to be as efficacious and as permanent as the ordinary oil.—*Medical News.*

**An Unique Hospital.**—An absolutely unique hospital is that situated on the shores of the lovely Tagernsee, in Tyrol (Coll. and Clin. Rec). The house surgeon and the four Sisters of Mercy in charge of this establishment are all of royal birth. The pure air of the mountains and the complete absence of dust are two of the most powerful agents of rapid recovery for the 2000 to 3000 patients who come yearly to have their eyes treated by the owner and doctor in chief of the hospital, Duke Karl Theodor of Bavaria. The Duke has founded this beautiful institution for poor people, and he has effected wonderful

cures during the past years. His lovely wife, the Duchess Marie Jose, Infanta of Portugal, is the guardian angel of the house. Her abnegation and entire devotion to the sufferers, who come from all sides to be treated by her husband, together with her extreme beauty and gentleness, endear her to all. At six o'clock in the morning she arrives at the hospital to assist the Duke during the operations, which take place in the early morning.—*The St. Louis Medical and Surgical Journal*.

**Cod Liver Oil and Creasote in Consumption.**—Dr. Julius Summerbrodt, Professor at the University of Breslau, has recently published his experience in the use of creasote in consumption. He states: "After nine years employment of creasote, in thousands of cases of consumptive patients, I have reached the conclusion that we can cure with creasote sufferers in the initial stages of lung tuberculosis, and not only the initial stages, but also longer seated and severer forms may be completely and permanently cured. Creasote is, for countless sufferers, an excellent remedy, thus far unequaled by any other for tuberculosis of the lungs. I consider the most desirable form for administering creasote to be the capsule, adding a readily-absorbable fat, as cod liver oil or olive oil."

Parke, Davis & Co. supply soluble elastic capsules, prepared from the finest French gelatin—cod liver oil ten minims, creasote one minim—which offer a convenient and agreeable mode of administering the remedies, and will mail to those interested a reprint of Professor Summerbrodt's report of his experience with these remedies.

**Gastric Activity in Infants.**—M. Van Puteren has made a long series of examinations of the digestive process in infants. A summary of the results of experiments made on 248 healthy infants is given in the *Boston Medical and Surgical Journal* of March 10, 1892. The following points are noted: 1. After a meal of from sixty to eighty grammes of milk, the stomach may be rapidly pumped out after an hour and a half, but the quantity rapidly diminishes during the first hour. At the end of two hours only from twenty to thirty cubic centimeters may be obtained, and this disappears slowly in the course of half an hour. 2. The acidity of the infant stomach is much less than that of the adult stomach. This was tested by neutralising with one-tenth normal soda solution, using phenolphthalein as an indicator. The averaged results showed an increase of from 0.03 to 0.036 per cent.—that is, from 0.3 to 0.9 part in 1,000—for digestive periods of from ten to ninety minutes, after which no in-



crease of activity was apparent. The lowest activity observed was 0.022 per cent., while the highest (0.121 per cent.) was only a half or a third of the amount considered normal in the adult. The determination of the character of the acid met with some difficulties, since many of the usual color reactions are uncertain in digesting mixtures of such feeble acidity. By the use of more exact methods M. Van Puteren convinced himself that hydrochloric acid is the normal acid in the infant stomach during the first two months, lactic acid being only exceptionally present. 3. The anti-fermentative action of the gastric juice seemed to be exceedingly feeble. Plate cultures made at successive periods of the digestion showed no marked difference in the number of colonies. The conclusions arrived at is that the gastric juice of the infant is not very efficient as a germ destroyer, and the infantile digestive organs are therefore particularly prone to disturbances, which, however, may for the most part be prevented by the use of sterilised milk. 4. The milk-curdling ferment (rennet) was always absent in infants up to twenty-four days, and could only be definitely demonstrated at thirty to forty days of age. M. Van Puteren's results as to the peptonising power do not seem sufficiently exact to be interesting. Albumen (by which is presumably meant a substance coagulable by heat) has generally disappeared by the end of the first hour, and peptone is constantly present twenty-five minutes after feeding and until the end of the digestive process. Sugar was always found, and fat also, so long as peptone was present. Free fatty acids (as the result of a fat splitting ferment, or of the similar action of the pepsin hydrochloric acid) could not be found.—*The Lancet, London, Eng.*

**Dead Bacilli in Tuberculous Sputum.**—The well-known Japanese bacteriologist Kitasato, who works in the scientific department of Koch's Institute for Infectious Diseases, has made an important discovery, which he records in the *Zeitschrift für Hygiene*. He has discovered, by attempts at cultures from sputa, that the great majority of the tubercle bacilli found in sputum are dead, a fact which cannot be proved microscopically, because dead bacilli stain just as rapidly and as intensely as living ones, from which also they do not differ in form. The same is true of preparations made from the contents of vomicae. This discovery is of considerable importance, from its bearing on the diagnostic value of preparations from sputum, and on the question of the transmissibility of pulmonary tuberculosis from one person to another. *The Lancet.*

**A Prescription for Young Physicians.**—According to the British Medical Journal, a distinguished Vienna professor gives the following prescription to all young physicians who call to take leave of him before embarking on their professional career; R. Veritatis, humanitatis, fidelitatis, a.a. infinitum. Misc. Ft. elixir vitæ. Signa: To be used constantly throughout life. It is easy, perhaps, for most men to start with a good stock of this spiritual elixir, but the difficulty is to find an apothecary who can dispense the prescription when the supply has run out.—*New York Medical Journal*.

**The Use of Aluminium for Food-Containing Utensils.**—The London Lancet gives the results of some investigations as to the uses of aluminium. Culinary vessels and surgical instruments have been made of it. Professor Lunge has instituted some new experiments with results as follows: The action of coffee, tea and beer upon aluminium vessels is nil or practically so; that of brandy is extremely slight; the action of acids and acid liquids (wine, sour-milk, fruit juices) is more pronounced but even in this case, he says, far too slight to cause any alarm whatever. Taking the worst case, that of acetic acid, he found a maximum attack of less than five milligrammes per 100 sq. centimeters in six days, and canteen holding a litre, and having on its inner surface about 600 sq. centimeters and an aluminium weight of about 200 grammes, would in the very worst case lose five milligrammes in a day, or one gramme in 200 days, even if it were always full. At this rate only in fifty-five years would it be reduced to half its weight.

Finally, he declares that aluminium may without any fear be employed for canteens or any other vessels used to hold articles of food, at least at ordinary temperatures. *North Carolina Medical Journal*.

**Contagious Diseases.—Monthly Statement.**—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department of the City of Albany, for the month ending April 30, 1892:

	Cases.	Deaths.
Typhus fever .....	0	0
Typhoid fever .....	16	3
Scarlet fever .....	51	13
Cerebro-spinal meningitis .....	1	0
Measles .....	79	3
Diphtheria .....	13	2
Small-pox .....	0	0
Varicella .....	6	0



## REVIEWS AND BOOK NOTICES.

USES OF WATER IN MODERN MEDICINE. Vol. 1. By Simon Baruch, M. D. The Physicians' Leisure Library, Detroit, Mich. Geo. S. Davis. Price, 25 cents.

To satisfy the want of a text-book on the therapeutics of water, as there seems to be a dearth of monographs on this subject in the English language, the author has undertaken to supply the demand. In the first volume he has presented an interesting history of the uses of water from the earliest times to the present, and has described the mode of action of water, its technique and clinical application, and in the volume that is to follow will doubtless discuss its therapeutic powers in individual diseases.

The author's views are expressed forcibly but without bias, and the book is of value in calling attention to a class of remedial measures which, in these days of poly-pharmacy, is apt to be overlooked.

LECTURES ON TUMORS. By John B. Hamilton, M. D., LL. D. The Physicians' Leisure Library, Detroit, Mich. Geo. S. Davis. Price, 25 cents.

This is one of the few books of this series which has undergone a second edition, and has been widely read by students, as the lectures are delivered in a colloquial style, and do not dip down very deeply into minute pathology. By a perusal of its pages one can get a good elementary and comprehensive acquaintance with the nature of tumors.

A PRACTICAL MANUAL OF DISEASES OF THE SKIN. By George H. Rohe, M. D., Professor of Materia Medica, Therapeutics and Hygiene, and formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc., etc. Assisted by J. Williams Lord, A. B., M. D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons; Assistant Physicians to the Skin Department in the Dispensary of John Hopkins Hospital. No. 13 in the Physicians' and Students' Ready-Reference Series. In one neat 12 mo volume, 303 pages. Extra Cloth, price, \$1.25, net. Philadelphia: The F. A. Davis Co., Publishers, 1231 Filbert St. In this manual, which is without any illustrations of skin lesions,

most of the space is taken up with the consideration of symptoms and treatment and but scant attention is given to cause and morbid anatomy. At the end of the book there is a list of the prescriptions to which attention has been directed in the body of the work. To those who cannot afford some of the more pretentious works on skin diseases, this book will be welcome.

#### MODERN MEDICAMENTS :

A complete list of their standard pharmaceutical preparations and specialties has just been issued by Parke, Davis & Co., handsomely gotten up with engraved cover, and forty engravings of their buildings at Detroit, New York, Kansas City and Walkerville, Ont., with views of the interior of the laboratories and offices at Detroit.

No such complete, comprehensive and well arranged list of the products of this house has ever before been published. To those who cannot see in person the thorough equipment of this house for the manufacture of the highest class of medicinal preparations, this list will convey some idea of their facilities, organization and system, which have contributed to their success. Copies of this list will be mailed all physicians on request.

---

#### PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets received :

Personal Experience of a Physician with an Appeal to the Medical and Clerical Professions. By John Ellis, M. D., Philadelphia, Pennsylvania.

The Second Year's Work in Diseases of the Rectum at the New York Post-Graduate Hospital. By Charles B. Kelsey, M. D.

Where Dentistry Looks Over Into Oral Surgery. By G. Lenox Curtis., New York City.

The Teachings of Experience and of Rational Therapeutics as to The Treatment of Pheumonia. By Boardman Reed, M. D., Atlantic City, N. J.

The Caustic Treatment of Cancer. By Daniel Lewis, M. D.

The Studies Upon Injuries of the Kidney. Nephrolithotomy and Nephrorraphy. By Aug. Schachner, M. D.

Thirty-Two Unselected Abdominal Sections. By Thomas Ople, M. D.  
Reaction of the Amide-Group upon the Wasting Animal Economy.  
By Profs. Samuel G. Dixon, M. D., and W. S. Zuill, M. D.,  
D. V. S.

Tenth Annual Report of the State Board of Health of the State of New Hampshire for the Year ending October 31, 1891.



THE

# Albany Medical Annals

---

VOL. XIV.

JUNE, 1892.

No. 6.

---

## MEDICAL EXAMINATIONS FOR LIFE INSURANCE.

BY O. F. KINLOCH, M. D.\*

**M**R. PRESIDENT AND FELLOWS: I am to talk to you this evening on the subject of Medical Examinations for Life Insurance. My paper was promised for the annual meeting, but for various reasons I have been unable to present it before.

I shall first speak of examinations for what is known as straight life insurance. There is another form known as the industrial, to which I shall pay attention later.

Examinations for this class of insurance is now a very comprehensive and exacting affair. To be a first-class examiner, the physician should not only be well versed in physical diagnosis and general medicine, but should also be familiar with the various tables of expectancy, proportion, etc., and withal a good student of human nature.

The examiner should never forget that he is the paid representative of the company, at the same time he ought to do justice to the agent who writes the business and to the applicant. This is no easy matter, as in most cases the examiner sees the applicant but once. In these cases the physician is placed in a position directly opposite to that usually held by him with his patients. A patient calls attention to anything he believes amiss with his health, while in these cases the applicant is sure he is in good health and will not mention, or else makes light of any fault in his

---

\*Read before the Rensselaer County Medical Society, April 12, 1892.

physical history or condition, therefore the doctor must exercise all his tact in obtaining information, particularly regarding the so-called "habits" of opium, chloral, alcohol, etc. He must also be keenly alive to the signs of early decay, and predisposition to disease. He should always ask himself the question, does the applicant appear older than the age given?

There is a system of rating adopted by most English companies, which as yet has been accepted by few in this country, and these do not require their local examiners to determine the rating, that being done at the home office.

Perhaps the term rating is not familiar to you all. It means the adding of as many years to the age of an applicant as some defect in his condition would, in your opinion, lessen the probability of his living the allotted time as laid down in the table of expectancy. This is arranged by adding to the premium, thus, a man of twenty-five years, rated five years, pays the same premium as a healthy man of thirty years. We are thankful that so far we have escaped this complicated affair, but as the latest statistics on this subject show that this class of risks are more profitable to the companies than first-class ones, we may prepare ourselves for it, for we know the Yankee habit too well to think they will long allow any scheme to pass them by in which there is an extra dollar.

Occupation is an important factor in determining a risk, but as most companies decide these matters according to the standard or special tables, I shall not go into details on this point. In general all occupations in which a person is required to work in an atmosphere containing fine particles of dust, as the baker, upholsterer, and moulder, are not considered good risks; particularly so if the family history shows any tendency to lung trouble. An ax-grinder has only to be mentioned to be condemned.

We have in our city a class of workingmen known as puddlers, and they should never be recommended as first class risk.

Exposed to intense heat and sudden draughts, they are especially liable to colds and lung troubles. Those of you who practice much among iron workers know that puddlers, like the good, die young.

Sometimes we meet cases when there is no part of the body to which we can point and say it is in an abnormal



state, yet we know them to be below par in general health. Such cases should be postponed for a long time or rejected. There are companies that require the temperature of applicants, and perhaps the thermometer might give us some information in the class of cases just mentioned.

Family history is never omitted in medical examinations for obvious reasons.

The physician who simply writes down the answers given by the applicant to the printed questions is not a good examiner. All such answers as child-birth, inflammation of the lungs, dropsy, etc., should be inquired into and the exact cause made out if possible. Ordinarily disease is judged from the usual medical standpoint, but some have a special significance from an insurance point of view.

In this part of our country the lungs are given the most careful attention, and we have to consider both acquired disease and hereditary tendencies. I use the word tendency because I do not believe that the disease phthisis is hereditary, but that there is transmitted a structural weakness I am fully convinced. Authors divide the character of susceptible lung troubles or phthisical tendencies into three classes.

*First*, and most important from an insurance point of view, collateral generation, more particularly the history of brothers and sisters. If an applicant has passed the consumptive age, and is in good physical condition with healthy surroundings, he is a fair risk.

*Second*, the preceding generation. They are always taken into consideration, although of much less value, as the majority of applicants have passed the age (15 to 30) in which most phthisical tendencies make their first appearance.

*Third*, the descendants, if any, of the applicant. This class is the least important of all, but is mentioned, as it might become of value in considering other facts. In England they have stated rules rating persons desiring insurance, who have a phthisical history, according to the number of deaths in the family and their relation to the applicant, the value being determined according to the rules above mentioned. Great disparity of age, or close blood relationship between parents is considered to greatly heighten hereditary tendencies.

*Heart disease* is usually given attention next, and to find anything abnormal means rejection with American companies, as a rule. Here again we differ from our English cousins, as most of their companies have been for years accepting risks with impaired hearts. The strength or weakness of a murmur is no guide to its gravity; the condition of the pulse will give you better information. I will quote one of their authors: "With a pulse regular in force and rhythm, and normal in tension, and where there are no symptoms indicating deficient compensation, the risk may, in many cases of heart leison, be covered by small extra premiums." A fatty heart is oft first discovered at the post-mortem, a fact which shows the difficulty of diagnosis in life. If we suspect this condition it is extremely important to determine its existence if present. The least dangerous of valvular heart leisons is aortic constriction with complete compensatory hypertrophy. In people of a nervous temperament we sometimes get a mitral bruit on examination which is not organic, but due to excitement. If subsequent examinations shall prove this, they are insurable. It is hardly necessary to state that in all cases where there is deficient compensation they should be rejected. I am informed that sphymographic tracings are required by one company, but I fail to see their utility if the examiner does his work well. If the applicant's lungs and heart are healthy, we next consider the kidneys; that means an examination of urine. It is my rule to have all specimens of urine voided in my presence; this I consider an important precaution. Albumen and sugar are the things first sought for, and if either is present the microscope is brought into use. The general subject of albuminuria is too extensive to be dwelt upon in detail in a paper like this. I will, therefore, merely mention some uncomplicated cases that may be considered by insurance companies in the United States.

*First*, cases where there is severe mental strain at times noted in business men, and in students when undergoing examinations.

*Second*, Over-exertion physically as has been noted in soldiers after a forced march, and also in the athlete.

*Third*, where a person takes large quantities of albuminous food such as eggs.



*Fourth*, when exposed to sudden colds as in the cold bath, etc. Some foreign companies accept risks with albuminuria by rating them, particularly cyclic cases. Albuminuria may be due to some temporary bladder or urethral trouble, and when we know this to be so the case should be postponed until recovery. A point well worth remembering is that in some families there is a tendency to bright's disease; this should be inquired into.

Sugar if detected simply means further examination; if constantly present it means diabetes and the rejection of the applicant. The foregoing are the principal things looked after, but a careful examiner will note anything that tends to shorten life. I will mention a few more points, and then close this part of my subject.

*Rheumatism* is not generally considered a barrier to insurance in American companies if there is no heart trouble, but in England a simple attack of rheumatic fever causes a rating from seven to ten years.

*Gout* is a sort of cousin to rheumatism; it seems to pave the way to other diseases; one with inherited gout is not a first class risk.

*Insanity*. Stillman says "hereditary taint lessens life twenty per cent." Statistics show that chronic insanity does not shorten life; acute does.

*Cancer*. This subject is usually looked after under the head of family history. Where there is also a phthisical taint the probability of cancer developing is increased.

*The ear* is an organ that is frequently overlooked by American examiners; it ought not to be as you will readily see if you but give it a moment's thought. Always reject an application if you detect exposed bone within the cavity of the tympanum. Other conditions of this organ should be given close attention.

*Hernia*; ascertain its history. Is a truss worn? does it fit? One's age and occupation has a bearing on the danger in these cases. The examiner has simply to state the facts on the application.

*Stricture*; this is liable to induce kidney complications, the younger the person the greater the risk.

*Obesity*; excessive fat means a poor risk. The degree of

departure from the normal proportion should always be stated.

Some companies have have a sick benefit clause in their policies. Their examiners are at times called to visit their sick members to determine the cause and probable duration of illness. This is largely a question of judgment, and the doctor should always be on the outlook for maligners.

*Accident Insurance* is hardly within the scope of my paper, but there is little in it that differs from the case just mentioned, except that it appertains to surgery instead of medicine.

*Industrial Insurance.* This is the so-called poor man's insurance, and like everything else for the poor man, he pays the largest price for what he gets. The amount of the policy seldom reaches \$1,000. Payments are made weekly and range from five cents up.

The fees for making these examinations are the smallest known to be paid for any professional service. The fact that several are usually made at one call and that they can be made at such times as not to interfere with their other work, often induce good men to accept the position of examiner for these companies. With the beginner the sums realized from these sources have been the means of keeping his star of hope above the horizon of despair.

The examination is a sort of an abortion; it is frequently made in buzzing mills and work shop, or in a house filled with noisy children. As a result the examination usually amounts to an inspection and nothing more, therefore the company whose examiner is honest and has the best judgment, gets the best risks, an *vice versa*.

The lot of an examiner varies somewhat with the company he represents as you may judge by brief description of some of the methods in vogue with the three leading companies in this country.

I shall designate them: The Met. the Pru. and the Han. The first named, I am informed, began business without a chief medical officer. It accepted risks from the cradle to the grave (70 years) and did not require any examination if the amount of the policy did not exceed the sum of \$200. As a result of such a lack of care they soon had a large list of claims. To offset these they employed a



set of men known as adjusters to make settlements. How the poor people fared at their hands you may guess, when you know that the adjuster's remuneration depended largely on the amount deducted from the face of the policy he was sent to pay. Under this system the just suffered with the unjust, and it resulted in constant complaints. So loud and frequent were they that the company was compelled to pay more attention to its medical department, and it now has a medical director at the home office.

If half that is told of local agencies be true, the intestinal tract is a straight line as compared with some of their transactions. The superintendent is usually a man skilled in chicanery and similar arts, with one eye ever on the outlook for the company and both eyes for himself. His assistants are usually men after his own heart, whose appointment depends upon their record. The latter is usually arranged after the proper consideration has been agreed upon with the superintendent. How about the doctor? Does he pay tribute to this Cæsar? I am afraid so, also that he sometimes lends his ear to the whisperings, "A personal favor;" "put this case through," etc. Poor risks soon speak for themselves, and then the kind-hearted doctor ceases to be an examiner. Occasionally a man is appointed who reports cases just as he finds them. This is not what the local czar wants, so complaints are sent to the home office thick and fast until he is removed, and one "who knows how to make industrial examinations" is again installed. The average length of time for an examiner with this company is about six months. The second company presents a happy contrast in most every way. Its business is conducted evidently upon an honest basis, and its medical examiners are not appointed through the local superintendents. In the various localities where they do business its examiners are organized into what they term "medical boards." Whenever an examiner is to be appointed in a locality, the chairman of the Board is asked to recommend a suitable man. They naturally select (for their own glory, if for no other reason) as reputable and experienced a person as they can get to accept. The result is that its examiners are of a higher standing, and its risks a better class than those of the company first mentioned. The

examiner usually holds his office for years.

The third company formerly did only a regular business, but for some years it has issued industrial policies almost exclusively. It has deservedly gained a reputation of doing an honest business. Its examiners were required to make examinations for both classes of insurance, and were men of ability, as a rule.

Its local superintendents were conservative men and they usually recommended a physician for examiner who was appointed after inquiries as to character and qualification had been made by the company's very able medical director. The examiner's tenure of office was without date so long as he did honest work. Within about a year this company has appointed several superintendents among whom are men who were former employees of the first mentioned company, and this fact recalls that familiar saying, "it is hard to teach old dogs new tricks." It is earnestly to be hoped for the sake of humanity in general, and the medical fraternity in particular, that the old tricks of making medical examiners, will not be inculcated in this company, for although the supply of doctors is unlimited, we have an interest in the matter of reputation. "He who *taketh* my good name" etc.

In order that examiners for this class of insurance will not become careless, the companies try various means. One, and a very good one, is that of re-examination by another physician. Another is the medical inspector who visits the different agencies at irregular intervals and inspects a number of the recently insured. This official has other duties, as investigating suspicious death claims, appointing examiners and assisting the medical director. But his chief work is that first mentioned.

The foregoing is a general statement of the condition of things as the examiner will find them to-day.

To all companies doing an industrial business and who want honest work, I have one word of advice to give; it is to be applied to the ordinary and to the medical business of their agencies, and that is *divorce*.

In closing I have a few words for the doctor. When it comes to the question of recommending a risk, if there are any misgivings as to desirability, give the company the benefit of the doubt.



## ASSOCIATION OF THE ALUMNI OF THE ALBANY MEDICAL COLLEGE.

### NINETEENTH ANNUAL MEETING.

The nineteenth annual meeting of the Association of the Alumni of the Albany Medical College, was held in Alumni Hall, on Wednesday, April 27, 1892. The usual informal reception was held in the library, where coffee and sandwiches were served, photographs exhibited and greetings exchanged, between the hours of 9 and 11 a. m. The meeting was called to order by the president, Dr. Horace R. Powell ('82), of Poughkeepsie, N. Y., at eleven o'clock.

The following members of the association, together with invited guests and others interested, were present: P. A. Brumagim ('44), W. H. Bailey ('53), C. H. Smith ('54), E. B. Boyce ('58), M. Felter ('59), H. Bendell, A. Vanderveer ('62), A. B. Husted ('63), C. B. Tefft ('64), E. I. Wood ('65), L. Hale, N. H. Mesick ('68), J. M. Bigelow, D. C. Case, W. Hailes, W. G. Tucker ('70), J. K. Thorne, G. L. Ullman ('71), J. H. Moon ('72), D. H. Cook ('73), J. Mead, H. E. Mereness ('74), S. A. Russell ('77), E. D. Fuller, G. P. K. Pomeroy, J. P. Prendergast, T. L. St. John ('78), G. M. Abbott, O. F. Kinloch, J. J. McAllister, W. J. Nellis ('79), C. B. Herrick ('80) A. E. Abrams, W. L. Allen, C. M. Culver, N. Everest, J. H. Mitchell, T. W. Nellis, F. G. Seaman ('81), F. V. Brownell, C. P. Byington, H. C. Finch, G. H. Houghton, G. Hudson, E. E. Maryott, H. R. Powell, W. B. Sabin, W. W. Scofield ('82), T. Smith ('83), J. D. Craig, W. C. Marselius, L. B. Rulison, M. A. Wheeler ('84). W. G. MacDonald, C. H. Moore ('87); M. Keenan, G. E. Lochner ('88); A. H. Bayard, R. L. Duncan, C. C. McCullough ('89); J. E. De Mund, E. S. Simpkins ('90); W. H. Conley, J. W. Joslin, W. N. Knowlton, J. H. Timmers, H. W. Van Allen, G. A. Williams ('91); L. Becker, H. H. Bradley, J. C. Brown, H. B. Burton, G. M. Fisher, E. J. Gallagher, W. I. Goewey, A. C. Hagedorn, R. A. Heenan, W. P. Kelly, W. G. Lewi, H. E. Lomax, C. H. Loveland, C. B. Mosher, L. H. Neuman, C. A. Patterson, E. E. Reichard, W. B. Rossman, C. R. Seymour, F. S. Temple, C. F. Theisen, L. Van

Auken, F. G. Warner ('92); H. E. Webster, F. Townsend, Jr., S. B. Ward, J. P. Boyd, F. C. Curtis, S. R. Morrow (honorary).

The president introduced Dr. Joseph D. Craig, who delivered the following address of welcome to the alumni on behalf of the faculty of the college :

#### ADDRESS OF WELCOME.

*Mr. President and Gentlemen of the Alumni Association :*

It is with positive pleasure that I have undertaken the fulfillment of my promise to extend on behalf of the faculty of the Albany Medical College and at its request, a cordial greeting to the returning members of this Alumni Association, and to give that hearty welcome which is so interesting and so becoming a feature of each yearly alumni meeting.

So at the very beginning of this day of kindly recollections and delightful renewals of old friendships, filled as it is sure to be with good will and good cheer, I proffer the extended hand of greeting in the name of old Alma Mater. Proud of her past achievements, of her progressive tendencies, of her honorable history and of the eminent men whose names have been woven in her crown of honor we, her dutiful sons, delight to gather at this annual festival and pay tribute of our gratitude and thankfulness. To-day we recall to memory and delight to honor those who have brought distinction to themselves and renown to our institution and to praise the heroic deeds of those who gave their lives a sacrifice in the cause of humanity. We take honest pride in our graduates who form the living active membership of this body, its chief strength and main support, whose prosperity and success in the practical affairs of life show the wisdom of the arrangement of our course and the result of the individual efforts of our faculty. While we hold in mind these things we do not forget for a moment to include a cordial and sincere invitation to membership in this association, to this class of '92, whose members still linger with us in congenial intercourse for a few brief hours, before going out into that great world in which trickery and deceit seem sometimes to bring temporary advancement and profit, but in which after all, honesty and industry yield the slower but more ample rewards and where success is always too dearly purchased if at the price of the forfeit of conscience, of honor, or of self-respect.

In order that these few minutes of greeting may be spent with the greater profit, I have clustered just a few brief thoughts around this theme, "the Hunterian method in medical education." It is of the application of the methods of this distinguished father of scientific surgery, not of the details of his life of which I wish briefly to speak. And that we may have the clearer knowledge we must remember the difficulties which beset his path. He worked with all the disadvantages of the pioneer in an unexplored country, and was hindered, as radical workers always are in science, by the enmities and jealousies of the empiricists of his day. There was no microscope or other instrument of diagnostic precision in those times to aid him in his work, and he was without that light which has been shed upon us by the magnificent discoveries of the last three generations and which have made our century illustrious in the history of the healing art.



John Hunter was a genius with all the unequal and unbalanced mental characteristics of his class, but it is not of his eccentricities or of his peculiarities or of his petulancy that I wish to speak. John Hunter was also an author whose literary style was notorious in his day for its obscurity, and whose periods were rounded with so little skill that both his lack of early advantages and training as well as his contempt for or ignorance of the literary standards of his day were markedly conspicuous. He was a teacher without clearness of expression or attractive personality, of whom only the most observing and attentive could learn, and his course of twenty lectures was always finished with a sigh of relief not only by the teacher himself, but also by his students, who, while they respected his great learning, failed to understand its verbal expression. I rather suspect that that sigh of relief has been caught up and re-echoed by succeeding generations of students even until this present time. A man cannot be everything. As a teacher and an author Hunter was a conspicuous failure, but his heart was never set upon being either of these things.

We dwell for a moment on what he was not, in order that what he was, may appeal to our intelligence with the greater clearness and force. It interests us more to know that he was a man of prolific mental resources, with keen perceptions and an indomitable will, careful in experiment, patient in research, unselfish in his devotion to science, and prodical of his means. His designs and their execution were original, while his industry often carried him to the very verge of the exhaustion of his physical powers. To a reasoning faculty developed beyond the understanding or appreciation of his contemporaries he united that rare power which is more often a gift than a result of cultivation of grouping his facts into classes and making generalizations therefrom. A new impetus was thus given to the science which he loved. He was to surgery exactly what Lavoisier was to chemistry, and Xavier Bichat to histology and Albert von Haller to physiology. Each in his own sphere was a master of his art, and Hunter was entitled to a place in that great galaxy of illustrious men to which humanity owes its progress and our own departments of medicine places among the exact, though not completed sciences of our century. He was an epoch maker in surgery, as was his pupil Jenner, who proved the efficacy of 'protective vaccination, or Morton who found the means of alleviating the sufferings of his fellow men beyond the estimate of human thought when he demonstrated the practicability of anaesthesia, or Lister who revolutionized the treatment of wounds when he gave to the surgical world the principles of antisepsis.

Enough has now been said in this brief suggestive way for us to recognize in all the thought and work of Hunter, how the application of the inductive method was the secret of his power to overturn the standards of his day. It seems strange, but it is nevertheless true, that this method of inductive reasoning which is as old as philosophy and stretches as far back in history as human thought can go, should never have been effectively and continuously applied to the elucidation of the problems of disease, until Hunter, in England, and later the medical scholars of Germany, made it a means by the use of which nature was made to surrender her secrets for the benefit of the human race. Before this time there had been men like Harvey and Pare who used this method with success, but who shone for only a brief period in the darkness of their age like the fitful flashes of aurora in the blackness of northern

sky. To-day all over the world of scientific medicine the example of the life of John Hunter is consciously or unconsciously followed by every earnest worker in the cause of progressive medicine. With patience, with zeal, with no thought of self, with only one object in view of finding and knowing truth, the whole scientific world of medicine is using every appliance and every means to accumulate fact, not that there may be made a catalogue of things that are known, but that from them laws may be formulated, the knowledge of whose working may be universally used for the alleviation of the sufferings of humanity and the lasting benefit of the race.

Medical education has been responsive to the tendencies of the times and has put itself in line with the foremost thought of the day. There is a positive movement away from the old didactic system of lectures without any by voluntary stimulus to the individual student mind, towards the methods of instruction by the clinic, by the laboratory and by the recitation. All these owe their advantages in the training of the coming doctors to methods the same as those used by John Hunter. The effectiveness of the method, emphasized by John Hunter among English speaking people, sometimes now fashionably spoken of as German, is universally recognized as the only system likely to produce lasting results. Medical education is not what any of us would have it, but it is progressive and in a state of evolution from the lower order of empiricism and custom to the higher order of effective training of young men to use their observing and reasoning powers, to the end that they may serve their fellowmen, fully equipped with every modern resource to repair the ravages of disease, to protect the healthy from the derangement of normal functions, to alleviate every bodily ill, or to mitigate the sufferings of those beyond the power of medical skill until there comes release in death. The influence of such training in medical schools must extend far beyond the day of graduation. It exerts upon the life of the individual a power for good which the great stirring and practical world is already beginning to recognize, appreciate and understand.

You will rejoice with me, fellow graduates, when I assure you that our Alma Mater is fully alive to the needs of the times; that the Albany Medical College is in the front rank of progressive medical institutions. Not only so, but the faculty of this college stand ready to step forward with the other colleges of this state, to make even more effective her teaching through this inductive method of Hunter just as soon as the profession and the public are educated to the higher standards and make such a movement practicable.

Knowing, then, that you can take just pride in this college of your choice, fully assured that your favor is not unworthily bestowed, feeling as you must the heartiness and sincerity of these words of greeting, I bid you all cordial welcome in the name of Alma Mater.

The president introduced Harrison E. Webster, L.L. D., president of Union University, who made a few remarks congratulating the Alumni on the size of the meeting and the success of their association.

On motion of Dr. C. B. Herrick, the reading of the minutes of the last annual meeting was dispensed with, and the minutes as printed adopted.



Dr. W. H. Bailey moved that the president appoint a committee of five to nominate officers for the ensuing year. Carried. The president appointed as such committee Drs. W. H. Bailey ('53), A. E. Abrams ('81), L. B. Rulison ('84), W. G. Macdonald ('87) and A. G. Root ('90). The committee retired.

The report of the executive committee and recording secretary was then presented. It stated that three meetings had been held during the year. At the meeting held April 29, 1891, the printing of the Alumni proceedings was authorized, and 1,250 copies were subsequently printed and distributed to the members of the association. The recording secretary presented a statement of the Alumni dinner account, from which it appeared that the receipts from tickets sold had been \$147, and disbursements as follows: Lunch at college, \$12, and for the Alumni dinner and cigars, \$226.20; total, \$238.50 (exclusive of printing, etc.); leaving a deficiency of \$91.50, which has been paid by the faculty of the college, as was also the postage upon the Alumni proceedings, amounting to \$24. At the meeting held November 4, 1891, the distribution of the proceedings was reported. A copy had been sent to each of the Alumni, together with a college catalogue and treasurer's blank. The publication of the THE ALBANY MEDICAL ANNALS, the official organ of the association, was discussed and Drs. Vander Veer, Macfarlane and Tucker, were appointed a committee with power to arrange for its future editorship and publication. At the meeting held March 1, 1892, the ANNALS committee reported that the volume for 1891 had been completed; two numbers of the current volume issued, and that Dr. Howard Van Rensselaer had been appointed editor and G. H. Reynolds, publisher of the journal. On motion, Dr. J. D. Craig was appointed a member of the committee in place of Dr. R. F. Macfarlane, removed from the city. The order of exercises for the annual meeting was discussed and the following committees were appointed: Arrangements of meeting, Drs. Tucker, Hale and Mereness; lunch and dinner, Drs. Tucker, Bartlett and Nellis; speakers and toasts, Drs. Vander Veer, Bendell, Culver and Cook; reception, Drs. Craig, Babcock, Allen, Willard, Russell, Duryee and Macfarlane. Dr. Theobald Smith, ('83) was

invited to deliver a lecture on Water Filtration before the association at the annual meeting and the faculty of the college were invited to participate in the exercises of Alumni day and to appoint some representative to deliver an address of welcome at the opening of the meeting. The recording secretary reported that the number of names with addresses upon the Alumni list was 1,152 and the total number of graduates to date 1,907. On motion of Dr. Finch, the report was received, adopted and ordered placed on file.

The treasurer, Dr. S. A. Russell, submitted his report for the year, from which it appeared that the balance on hand at the time of making the last annual report was \$105.86; receipts during the year, for dues \$86, and for interest, \$1.96; total, \$193.82. Disbursements during the year, \$105.50, leaving a balance on hand of \$88.32.

The report was referred to a committee consisting of Drs. L. Hale, H. C. Finch and D. C. Case, who examined the same, compared the disbursements with the accompanying vouchers and subsequently reported it correct. The report was then accepted, ordered filed and the committee discharged.

The president's address being the next order of business, ex-president Vander Veer was called to the chair, and President Powell delivered the following address:

#### PRESIDENT POWELL'S ADDRESS.

##### *Fellow Alumni:*

When I left Poughkeepsie about one year since and came up here to attend the annual meeting of this association, little did I think that I should be chosen to preside over your deliberations. Previous to that time your judgment, by myself, was unquestioned. I have since often thought that you had in mind something done which merited the punishment of being compelled to write an annual address. This time, pardon is granted.

I esteem it an honor, gentlemen, to be president of the association of the alumni of the Albany Medical College, for, like the worthy president of Union University, I *believe* in our college because I am satisfied she does good, honest work.

In all efforts to elevate the standard of our profession, she has been foremost in initiatory steps.

Partially because of inability to present a finished dissertation on any particular topic, and as time will not permit of such, my remarks will consist of some timely suggestions to the graduating class.

GENTLEMEN.—It gives me great pleasure to meet you as a body, and to welcome you to membership in our association.



You have completed the prescribed course, and will to-day have conferred upon you that degree for which mankind has the greatest respect. We welcome you as our equals, save that prestige born of age and experience.

Success is the goal you desire to reach. This is no easy matter to attain, for success depends not only upon knowledge, but as well upon tact and circumstances. The struggle will be a hard one. In order to meet with the greatest degree of success, you must look well to the little things of personal and professional life.

Remember that you leave here with comparatively little real practical knowledge. Froude says: "The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it, and converts itself into practical power; the rest hangs like dust upon the brain or dries up like rain drops off the stones."

Graduating, you are not real physicians—only embryos, needing for your complete development, experience, tact, industry and perseverance.

Although hospital experience and post-graduate courses are not indispensable, they are valuable adjuncts to the formation of your professional character. Fortunate, indeed, is the newly-made M. D. who is not obliged at once to enter upon private practice; for your pupilage here has but taught you *what, how, and when* to study. Circumstances only should indicate whether to enter into association with other physicians, while self-reliance is to be commended, the experience of others is not to be ignored.

The world is already over-crowded with physicians, but not with good ones; be zealous for classification among the latter.

The great objection to a young practitioner, while usually ascribed to youthfulness, bachelorhood, etc., is in reality absence of experience. Remember that "rolling stones gather no moss," and let wisdom mark your choice of a location. Arrange your office so that it shall be neat, and endeavor to maintain cleanliness and attractiveness. Provide entertainment—newspapers, periodicals, etc., for those who wait; for, aside from a railroad station in "blizzard time" there is no place where to wait unemployed is more distasteful to the majority of people than is a doctor's office.

Allow me to warn you against the indiscriminate purchase of books and instruments. Purchase all the books and subscribe for all the periodicals you can read, digest and pay for; remembering that a few standard works, well mastered, are preferable to a whole library of encyclopaedias infrequently consulted. The same general idea applies to instruments. Keep books and instruments in good condition. Nothing is more humiliating to an operator, or more distasteful to patient or friends, than the display of dirty, rusty instruments, or an endeavor to use scalpels that won't cut hot butter.

Observe closely as possible regular and convenient office hours.

*Use your office for business only.*

Cultivate a social habit, but do not indiscriminately harmonize with those who, through ignorance or any other cause, show lack of appreciation.

Treat all other physicians with cordiality and deference. Be slow to believe them incompetent and not well-meaning.

Advise no man to study medicine, unless you are thoroughly satisfied that by virtue of his natural ability and educational acquirements he will make a good physician. The man who takes especial pains to please the ladies and children is the one who succeeds in practice. The old woman,

with her "goose grease and molasses" must not be ignored—for goose grease is good; so is molasses.

In a city, two good horses should carry you to all the patients you can attend, using one in the forenoon—the other in the afternoon. The driving of teams, although pleasant, is doubtfully profitable, especially if you have a large practice; display of horse flesh and equipages are not factors in successful practice, nor will they conduce to thorough appreciation of good work.

From the outset, keep a good set of books and so thoroughly that accounts can be readily found. As a rule, render bills at stated intervals, remembering that short bills make long friends.

Bearing in mind that you earn your money, and that good professional service cannot be cancelled by dollars and cents, never feel that you are not as fully obligated to meet your own payments as anyone else.

Bills promptly rendered are more apt to be respected and paid; besides, you thus obviate the tendency to encourage dishonesty on the part of those who cannot pay large bills. A bill being partially or wholly paid, the family is more apt to re-employ and pay you.

Respond to calls promptly and cheerfully, according to each such time as it seems to require, in order to make a proper diagnosis—by exclusion—and to arrange a satisfactory line of treatment. Give all directions in plain yet concise manner, and when your work is completed—go.

Treat your competitors courteously if you desire their friendship and confidence. If you are shrewd, you will early be enabled to judge of their merits.

Honorable competition is commendable, but this action should not banish aggressiveness.

The golden rule should not be forgotten. The less said in criticism of a predecessor, the better.

If you feel called upon to criticize, let it be commendatory or nothing.

Do not expect exact justice at the hands of the public, for disappointments are unpleasant. Your professional and personal reputation will suffer at the hands of "dead beats."

Utilize your spare time in perfecting yourself in practice, not neglecting to keep thoroughly posted on general current topics.

Write all prescriptions legibly. Hieroglyphics are proper only in chemical laboratories and chemical lecture-rooms.

Be easy and natural in your manner, and cultivate ability to properly communicate to friends the points in any case. In other words be students of human nature.

By early consultations, avoid so far as possible suits for malpractice. When called to give expert testimony, be honest, straightforward, using plain, untechnical language, and volunteering no information.

Be especially prompt in reporting births and contagious diseases.

In writing for medical journals, be concise—take space for only what you think would prove interesting.

Remember that medicine is not a perfect science, nor is life a definite quantity; in any case new symptoms may develop, therefore bear in mind the possibilities as well as the probabilities.

While, of course, leaving religious work to clergymen, respect your patients and their friends in their religious views.



Make it a rule to never examine the generative organs of females unwittingly. Observance of this rule may save you much embarrassment.

Have nothing to do with family quarrels; that is not your mission.

Endeavor to be shrewd in early detecting loss of confidence. Foreshadow bad results which may occur by early consultations.

*Always* be prompt in meeting appointments for consultation.

Encourage well-directed efforts on the part of nurses and other attendants, and cultivate the habit of being a good but silent listener in the sick room.

Seek to make your preparations agreeable to sight and taste. A patient has a mind as well as body—in other words, practice mental therapeutics.

Hygiene is often as essential as drugs; this is especially true in complaints from the better classes, who frequently need little medicine, but much fresh air, sunlight and exercise.

Advise no patient's removal far from home unless it is probable that benefit is to be derived, for, especially in the dying hour, there is no place like home.

Be self-reliant and self-possessed. Never form the habit of sending difficult cases to specialists, thus abridging your usefulness, lessening confidence in you, and diminishing your fees.

Endeavor to develop skill in withholding medicines when not needed for success in practice consists as well in knowing what not to do as what to do.

The law of medicine is progressive. "For never yet had one attained to such perfection but that time and place and use have brought addition to his knowledge, or made correction, or admonished him that he was ignorant of much which he had thought he knew, or led him to reject what he had once esteemed of highest price."

Be gentlemanly in your deportment. Look to character as well as to reputation; character is what we really are; reputation what others think of us. One must possess self-respect if he desires the respect and confidence of others. Especially in the beginning of your career temptation will arise; but, gentlemen, do not allow yourselves to become complicated, no matter whom you may offend. The community will soon appreciate your true moral worth, and, mark my word, they seldom make mistakes in this direction. Support various laudable enterprises in the community where you reside, but let every act emphasize, I am a physician.

Our work necessarily precludes meeting brother practitioners; hence the tendency for physicians to become egotistical, and ratty in practice. The great and only remedy lies in medical association.

You should be thoroughly conversant with matters affecting state hygiene. Examine carefully the surroundings of your locality, with especial reference to sewerage, water supply, cesspools, old wells, vaults, and last but not least, the character of the soil and subsoil.

It is said that he who depends upon experience but repeats the mistakes of his predecessors. Permit no atrophy of the brain from disuse; cultivate early a love for and habit of study. The late Professor Vanderpoel, in his address to the class in which I had the honor of membership, said: "The love of study is the only eternal passion; all the others quit us in proportion as this miserable machine which holds them approaches its ruin."

With this last thought, I leave you.

For your success you have our best wishes.

And now, Fellow Alumni, all I have to say in conclusion is, that the Albany Medical College was never in such a prosperous condition as she is to-day; she never stood higher in the respect of the medical profession of the world; she never had so good a Faculty, and her curriculum was never so comprehensive, or her facilities more complete. Encouragement is what should be given by ourselves to the Faculty; send no man to them who lacks preparation or an ability to assimilate the intellectual pabulum offered. Let us endeavor, so far as possible, to be present from time to time at all the exercises on Alumni Day. I possess sufficient confidence in the corps of instructors to believe that if we properly press "the button" they will properly "do the rest."

I close, thanking you for expressions of confidence, for your presence to-day, and your kind attention to what I have seen fit to inflict upon you.

The members of the class of '91 were present in a body and rose when the president addressed them and received them into membership in the association.

On motion of Dr. Bendell, seconded by Dr. Seaman, the thanks of the association were tendered to Dr. Powell for his interesting address, a copy of which was requested for publication in the proceedings.

President Powell then resumed the chair.

The report of the historian was then read by Dr. C. M. Culver, as follows:

#### REPORT OF HISTORIAN, DR. E. A. BARTLETT.

##### *Fellow Alumni:*

It is always pleasant for your historian to be able to report progress in the affairs of our Alma Mater, and the past year has been a "red letter" year in this respect. In it has been demonstrated by the progress made and excellent examinations passed by the students, what can be done with thoroughly equipped laboratories for special work and a corps of professors and teachers thoroughly in earnest.

Facilities for clinical and outside study have been so developed that now students of the Albany Medical College have quite as good opportunity for practical instruction as those in many larger institutions and these have been appreciated as is shown in the full attendance and close attention at the numerous clinics. Every year something is added to improve the facilities offered to students, and this year improvement was in the direction of clinical work.

Were it not that we are writing a history and not a prophecy we might speak of some of the good things the trustees and faculty have in contemplation, but we must suffer time to make them manifest. Suffice it for each alumnus to know that his Alma Mater was never in better condition than now to make good the promises set forth in the "annual announcement," and, let each one feel assured that the student he sends to the college will be so fitted for his life work as to be an honor to our profession and a credit to our institution.



From all parts of our country and from foreign lands come such reports of our graduates who are doing grand work in surgery, medicine, hygiene, and bacteriology, as may well make us proud of our Alumni association. Let the good work go on.

E. A. BARTLETT,

Historian, A. A. A. M. C.

On motion the report was received and ordered entered on the minutes.

No report was received from the class historian of '52.

Dr. H. Bendell made a verbal report for the class of '62.

The following communication was read from Dr. Alexander Nellis, Jr., class historian of '72:

*Mr. President and Fellow Alumni:*

Early in March, 1892, I mailed a circular letter to every member of the class of '72, whose address was known, sixteen in all, and six responded. It was suggested that brief summaries of experiences be furnished for publication in the proceedings of the Alumni Association and seven expressed a willingness to do so. Of those whose addresses are known, fifteen are located in New York and one in Colorado. The addresses of five were unascertained, viz.: Drs. Benjamin, Bonter, Green, O'Brien and Rice. Four have died, viz.: Drs. A. A. Snell, A. S. Allen, J. E. Allen and George A. Pierce.

Very sincerely,

ALEXANDER NELLIS, JR.,

Class Historian '72.

Dr. Sabin presented the following report as class historian of '82.

#### REPORT OF THE CLASS OF '82—DR. WILLIAM B. SABIN.

*Mr. President and Members of the Alumni Association:*

A decade of years has passed since our Alma Mater conferred upon us the degree of Doctor of Medicine, which the Class of '82 strove by three hard years of study to attain, and it is with much pleasure that some of the class have been able to meet here on this anniversary day and renew the friendships formed during our College life.

The commencement exercises were held at Tweddle hall on the evening of the first of March 1882, and despite the rain, which came down in torrents, our friends filled the hall to its utmost capacity.

Dr. E. N. Potter, then president of Union University, conferred the degree of Doctor of Medicine and presented each of us with our diploma.

Three of the Faculty have died during the past ten years—Dr. Jacob S. Mosher, Dr. S. O. Vander Poel and Dr. John P. Gray, each of whom was eminent in his profession and of national reputation, and whose loss was deeply felt by the college and the profession at large.

Our class numbered forty-nine members, six of whom have passed to that undiscovered country from whose bourne no traveller returns.

I have written to all the surviving members of the class, with the exception of one, whose address I was unable to ascertain.

Taking the names in alphabetical order, I find that Hiram C. Abrams is located at Newtonville, Albany county, N. Y., and, although I received no answer to my letter. I know that he has a good practice and is prospering. He is married and has children.

William M. Armstrong died at Edinburgh, N. Y., on the 31st of May, 1884, aged 26 years. I understand that he died from phthisis. He was very popular among his classmates, and during his college life gave no evidence of the dread disease which soon claimed him.

Henry D. Blanchard's address is Portlandville, Otsego county, N. Y. No answer.

Richard J. Brown was located at Albany for some time; received no answer.

Frank V. Brownell, after graduating, received the appointment of house physician at the Albany City Hospital, and served his term of eighteen months, then located at Fort Plain, N. Y., where he remained six years, was then married, and after spending a few weeks at the New York Post Graduate school decided that Fort Plain was too small a place, and on the first of April, 1890, moved to Schenectady, N. Y., where he expects to stay as long as he practices medicine. Hopes to meet all the boys of the class of '82 at Albany on the 27th.

Harry M. Burch is located at Salisbury, Conn., and writes: "In July, after graduating, located at East Canaan, Conn., with \$5.00 in my pocket and head-over-heels in debt; remained there ten months paying expenses and reducing my debt somewhat. From there removed to this place, a manufacturing and farming community in one of the most beautiful sections of New England; here I have remained steadily at work, with the exception of one week spent in Chicago in attendance at my own wedding, March 3, 1886. Have two children, a boy five and a girl two years old, and hope all my classmates are as blessed in their home life as I. Am at present, and have been the past four years, visiting physician at the State Institution for Imbeciles at Lakeville, Conn. Coroner for the town past eight years, health officer, school committee, etc. Thus you see my life is a busy one, and in my opinion not worth living unless it is expecting to be with you on the 27th.

Frank Burton is located at Minneapolis, Minn., and is professor of anatomy in the Minnesota State Hospital.

Cassius P. Byington writes: "It was just ten years ago, that, with my grip in one hand, my diploma in the other and my cranium packed full of theories (which it was safe to say were not backed up by a very extensive practical knowledge of medicine). I, with about forty others were turned loose from our alma mater on an unsuspecting public, as full-fledged physicians. I look back to those first two or three years of getting experience at the expense of my patients, deeply impressed with the thought that an overruling and all-wise Providence often intervened and saved my patients in spite of the treatment they received. On April 23, 1882, I located at Croton-on-the-Hudson, a small village of about 1,500 to 2,000 inhabitants, thirty-five miles from New York city on the line of the New York Central Railroad. I have succeeded in building up a nice practice, have a pleasant home of my own, overlooking the most beautiful portion of the Hudson River. I married in 1883, and have two boys aged respectively eight and two. I have ambitions and aspirations but do not let them prevent me from being happy and con-



tented. I expect to be with my class April 27th for a grand good time all around."

Calvin E. Carpenter. I was unable to ascertain his address, but the last time I saw him, he told me that he had given up the practice of his profession.

William S. DeGolia at last accounts was located at Chattanooga, Tenn. No answer.

Wallace E. Deitz writes: "Those ten years from the departure of our alma mater, seemingly have passed but as yesterday, to look back over the arduous duties, and perplexing studies of a college student, tends to bring us back at this age, again to a college student. Never in all the history of my life did labor seem so hard and unavoidable as when taught by the gentle care and training of our alma mater, which was a God-sent blessing the class of '82, of which I am fortunate enough to be a member." About May 12, 1882, he located at Howe's Cave, Schoharie county, N. Y., and in April, 1884, he changed to his present location, Berne, N. Y., and is enjoying a successful practice. He is physician of the Board of Health of the towns of Berne and Knox.

James S. Dornet died at Denver, Col., March 1st, 1883, just one year after his graduation. He died from phthisis, and all through his college career his classmates could see that he would never be able to enjoy the pursuit of his chosen profession.

Bernard Egan is located at Cohoes, N. Y. No answer.

Henry C. Finch, after graduating, returned to his former home at Broadalbin, N. Y., and soon began the practice of medicine. Two years later he opened a drug store, with a partner, which still continues, and he says he finds it a great convenience, enjoys a very pleasant and remunerative practice and has every reason to look back with pride and respect upon his Alma Mater. Has three children, two boys and a girl; says shall make a special effort to be present at the class reunion April 27th.

Reynaldo J. Fitzgerald is located at Minneapolis, Minn., and is surgeon of the First Minnesota State Regiment.

William E. Fox is located at North Hoosac, N. Y., and enjoys a good practice.

Willard Gillette's address is Roseboom, N. Y. No answer.

Frank L. Harter's address is Parish, N. Y. Have not heard from him.

Daniel Clinton Hazen died at Lowell, Ill., in April, 1888, leaving a wife and one son. I do not know the cause of his death. I received a letter from his brother-in-law and he says "that D. Clinton Hazen was as good a man as I ever met and was well liked by everybody."

Fred Holcomb. I received a letter from his mother stating that he died at Kensington, Ill., on the 28th of March, 1891, of double pneumonia, after an illness of six days. She says he was a successful physician and was engaged to be married to a very nice young lady. Mrs. Holcomb wishes the surviving members of the class a pleasant reunion.

George J. Holmes writes: "In regard to my experience I would say that it has been one of progress, and I have never forgotten the lessons in hard study and hard work which the Faculty of the Albany Medical College taught me, and especially has the work in the pathological laboratory with Professor William Hailes, Jr., been of the greatest service to me. I cannot refrain from saying a word about my friend and lamented teacher, Dr. Jacob S.

Mosher. His advice has often been of the greatest service to me, and I believe that now, if not for his kindness in a very material way, I should have no occasion to respond to the historian of the class of '82. For six months after graduation I did not enter into any very active practice of medicine, but followed the advice of Dr. Hailes, my preceptor, and spent the time on my father's farm, but meanwhile I reviewed, rewrote and indexed the lectures for the entire winter on which I had passed my examinations, for I had very little time to read text-books. This rewriting I found a little hard to do, but persevered, and as a result I have seven little volumes of manuscript, which I consider to be to-day as orthodox as any text-book in the various departments of medicine printed at that time. This I did because I loved to study, but I have found that it was almost equivalent to a post-graduate course. In September, 1882, I settled in New Britain, Conn., and for five or six years had a good general practice with a tendency towards the throat, nose and ear. In the spring of 1889 I took a special course at the New York Polyclinic, visiting many hospitals in New York. My special work compelled me to relinquish gradually my general practice and devote my time to my specialty, not because I desired it but because the people compelled me to do so. I am at the present time taking a second course at the New York Polyclinic on the eye, ear, throat and nose. I established an office in Hartford, Conn., about a year since, and between the two cities, Hartford and New Britain, I keep very busy. I shall endeavor to be with you on class day. I have no family.

George H. Houghton is located at Albany, N. Y., and enjoys a successful and remunerative practice.

Levi C. Hubbard's address is Utica, N. Y. No answer.

George Hudson is located at Stillwater, N. Y., and is a successful practitioner. He is the same genial, whole-souled fellow as of old, and he says he will try and put in an appearance on Wednesday morning, and hopes to see a good number of his old friends and classmates in attendance.

William Kamp is located at Belleville, Kansas, and writes: "Regret my inability to attend the reunion. Have a good location and thoroughly satisfied. Have a good paying practice. Am married, have no children. Am a Cleveland Democrat in the ex-banner Republican state. Hope you will have a good reunion. Hope there will be no more absentees.

George E. Lyon, after graduating went to New York and entered the College of Physicians and Surgeons, from which he graduated. Was Health Officer of West Troy a year and then located at Troy, N. Y., where he is enjoying a good practice and is also doing quite a little special work on the throat and nose. Dr. Lyon lost his wife about a year ago.

John W. Mann died at Albany, March 4, 1884, where he had practiced since graduating. He was taken ill with scarlet fever, which was followed by an attack of Diphtheria, then with acute desquamative nephritis ending with secondary pneumonia, which caused his death. You all remember he was the heaviest weight in the class, weighing 210 pounds. He was married.

Edward F. Marsh's address is Fulton, N. Y. No answer.

Erastus E. Maryott is located at Springfield, Mass., and writes: "When I graduated from the Albany Medical College I was living at Berlin, Rensselaer county, N. Y., where I remained until April of the following year, wearied by the long rides of a hilly country I moved to Suffield, Conn. I



remained there only a few weeks, but they were weeks of waiting and anxiety. At the time of graduation was married and had six children, three boys and three girls. My oldest a boy nearly ten years old, had been the recipient of the Silver cup from my class Brown, 1870, as the first boy of the class. I went from Suffield to West Springfield and at once began a successful and remunerative practice. While there I had the misfortune to lose my favorite child, a bright girl eight years old, of malignant diphtheria, and four weeks later a sweet baby of cholera infantum. In 1887, I sold out my practice in West Springfield, hoping to emulate the success of more fortunate city practitioners, I moved into Springfield. Had I known the struggle and competition of my new field in advance, I should have shrunk from the undertaking. I have experienced the list of "dead beats," and am getting an improving practice. Am doing honest work, and climbing to a place of recognition among the profession of our city. I have at present four boys, the youngest five years old, and two girls.

Walter B. Miller writes from Millertown, N. Y., that he is doing well and hopes to be able to attend the reunion of the class of '82.

Adam Y. Myers writes that he is doing a good country practice in Buskirks, N. Y., where he purchased property of Dr. J. C. Reed. Is married and has two boys nine and four years of age, says he is endeavoring to keep up with the times, by study of books and journals, and has a good library. Will try and be at Albany on the 27th.

James R. Newton is located at Scranton, Pa., and writes that he regrets his inability to be present on the 27th, and says: "In my post-graduate experience I know of nothing worthy of being thrust upon the notice of my classmates."

Frank A. Palmer, after graduating, opened an office in Albany, where he remained a few months. In the summer of 1882 went to Glens Falls and entered into partnership with Dr. Ferguson, remaining until October, 1882. From that time until February, 1883, he spent the time in and about the hospitals of our great cities, after which he located at Mechanicville, N. Y. Says he has seven competitors, five regulars and two homeopaths; is married and has two children, a girl aged six and a boy aged ten. The boy bears the name of William Hailes Palmer. Says he would always be glad to entertain any of his classmates who could spare the time to visit him.

Milton Parsons (no answer) is thought to be living in Missouri.

William J. Peddie is located at Fultonville, N. Y., and, although I have not heard from him, I know that he has a fine practice.

William B. Platner's address is Germantown, Columbia county, N. Y. No answer.

Horace R. Powell, our alumni president, writes: "Immediately after graduating I located at Housatonic, Mass., where I remained about six months, when I removed to this city (Poughkeepsie, N. Y.). During the first three months of my practice here I collected the magnificent sum of \$1.25, and during the next year \$187.75. I am at present doing an especially fine general practice and am not connected with any hospital. I have been health officer of the city and president of the Clinical Society of the city of Poughkeepsie, am a member of the Dutchess County Medical society and president of the "Davy Crockett" Hook and Ladder Company, also an associate member of the Poughkeepsie Bicycle Club. I belong to the Knights of

Pythias, Order of United Friends and examiner for several life insurance companies, being chairman of the medical board of the Prudential Insurance Company for the Poughkeepsie district; am married and have two children, a boy of eight and a girl of four and one-half years. I think had I my life to live over again I would study for a millionaire.

"For of all the sad words of tongue or pen.

The saddest are these—'It might have been.'"

Fred H. Ray writes: "Not having been engaged in medical work I consider myself an unimportant link in the class chain. The October following graduation at A. M. C. I went to the University of Pennsylvania and began post-graduate course, but left before completing it to accept a commercial position in St. Louis, where I remained six years. Disliking St. Louis I obtained a place with a wholesale drug house at Helena, Mont., (Parchen & Co.) where I have been the last three years. I married in St. Louis November, 1888. My reasons for not pursuing professional work were largely financial. I have never regretted earning an M. D. diploma, and my recollections of alma mater will always be pleasant."

Joseph W. Riley died at West Troy, N. Y., January 15th, 1886. Dr. Riley received the appointment of house physician at the Albany penitentiary, and while endeavoring to stamp out the dread typhus fever, which had gained a footing there, was attacked by the disease himself, and after an illness of fourteen days died from heart failure. Dr. Riley was a very popular young man and made friends wherever he went, and his professional career, though cut short, was one that was an honor to his name.

Addison O. Roberts is located at Greenbush, N. Y., where he is doing a good practice, the first few years after graduating were spent in practice at West Sandlake, but the hardships of a country practice made it necessary for him to move to Greenbush.

Sydney F. Rogers writes: "After graduating I settled in Troy, N. Y., where I now am and have remained ever since. Upon inventory I found I possessed a wife, two small children, a very limited amount of money and a diploma from the Albany Medical College, a parchment of which I have always been proud. During my ten years practice I have met the varied experiences of a doctor's life. Am not connected with any hospital; business has been good from the start and continues still. Have purchased a fine home and am prospering beyond what I had reason to expect; am still a close student; am very grateful to the ever watchful and kind Providence for my success, and my prayer is that He may watch as carefully in the future.'" Bids all the class of '82 a hearty welcome to his home.

William B. Sabin, your Historian, is located at West Troy where he is in general practice and does some special work on the eye and ear. Has charge of the Eye and Ear department of Fairview Home for friendless children in Watervliet. Spent part of two winters in New York at Post Graduate and Polyclinic schools. Is married and has one child, a little girl two months old.

Ernest L. Sampson's address is Mexico, N. Y. No answer.

Walter W. Scofield writes: "On March 15, 1882, entered the Albany City Hospital as apothecary, and served successively as apothecary, senior assistant and resident physician. September 18, 1883, hung out my shingle at Dalton, Mass. December 14, 1883, entered the Albany Hospital as a patient with Typhoid Fever; made a good recovery, returned to Dalton January 17, 1884,



and was married to Miss Chatlotta A. Wands of New Scotland, N. Y., January 29, 1884. Was in debt for my education to the amount of \$1,400; had but little practice; was still feeble in health and no friends upon whom I could rely for aid. As Abraham Lincoln said, it was a case of "root hog or die." Wife and I went to work and have since continued so to do; our debt is paid; we have a very fair outfit, a snug bank account, a boy (Walter W., Jr.), who has just passed his seventh birthday. We are contented in our field and thankful to God and the good people of our town for all kindness received.

Lemon Thomson, Jr., is located at Glens Falls, N. Y., and writes: "Am in possession of good health, a good wife and two hearty kids, and as fair a practice as one could expect in a place the size of Glens Falls." Was appointed United States Pension Examiner and still holds the position of secretary of the Board at that place. Will allow of no small obstacle to prevent being at the Alumni Meeting.

Thomas C. Walsh's address is Syracuse, N. Y. No answer.

Isaac C. Washburn; believe he is practicing at Chatham, N. Y. No answer.

John B. Washburn writes: "After leaving college I located at Lake George for a short time when I was taken with a severe attack of Western fever and consequently went West, and in four months returned completely cured. In January, 1883, I located at Westerlo, N. Y., where for six years I practiced, and then pulled up and moved six miles further on to Rensselaerville, where I staid until this spring, when again I made another change to this place (Delmar, Albany county,) where I have some hopes of staying for at least another decade or for life. As far as the practice of medicine is concerned I have nothing to complain of. Have had very good success and plenty to do, and hope to see all on Wednesday next.

The class of '82 extends a hearty welcome to the class of '92 and wishes each and every member a long and successful career.

WILLIAM B. SABIN,

Historian, Class of '82.

The corresponding secretary read the following

#### NECROLOGY.

Dr. Benjamin E. Bushnell ('44), at Little Falls, N. Y., May 1, 1891, æt. 80.

Dr. John J. Flint ('46), at Albany, N. Y., July 19, 1891, æt. 73.

Dr. Frederick S. Greene ('46), at Coxsackie, N. Y., September 30, 1891, æt. 71.

Dr. Austin W. Holden ('48), at Glens Falls, N. Y., July 19, 1891, æt. 72.

Dr. William R. Griswold ('53), at Chicago, Ill., February 21, 1892.

Dr. James H. Eaton ('54), at Syracuse, N. Y., July 20, 1891, æt. 58.

Dr. Daniel Pardee ('55), at Fulton, N. Y., August 25, 1891, æt. 62.

- Dr. Henry H. Du Bois ('56), at Watertown, Ct., April 11, 1891, æt. 59.  
Dr. James Sweeney, ('59), at Brooklyn, N. Y., February 18, 1892, æt. 54.  
Dr. Alexander B. Willis ('70), at Schenectady, N. Y., May 9, 1891, æt. 43.  
Dr. William T. Baynes ('71), at Troy, N. Y., January 22, 1892, æt. 51.  
Dr. James C. Healey, ('77), at Albany, N. Y., March 30, 1891.  
Dr. Horace T. Sprague ('77), at Boutte, La., August 16, 1891.  
Dr. William H. Hagadorn ('80), at Albany, N. Y., July 2, 1891, æt. 47.  
Dr. Dennis P. Shevlin ('80), at Albany, N. Y., May 6, 1891.  
Dr. David Fleischman ('81), at Albany, N. Y., January 30, 1892, æt. 33.  
Dr. Fred Holcomb ('82), at Kensington, Ill., March 28, 1892.  
Dr. Franklin M. Devoll ('84), at Guilderland, N. Y., April 20, 1891.  
Dr. George H. McTammany ('84), at Ashville, N. C., April 12, 1891.  
Dr. Jesse W. Roscoe ('89), at Sloansville, N. Y., February 1, 1892.

The committee appointed to nominate officers presented the following report which was read by its secretary, Dr. Root.

*For President,*

Dr. SAMUEL H. FREEMAN ('46), Albany, N. Y.

*For Vice-Presidents,*

Dr. CHARLES B. TEFFT ('64), Utica, N. Y.

Dr. ADAM T. VAN VRANKEN ('73), West Troy, N. Y.

Dr. FRANLIN P. BEARD ('75), Cobleskill, N. Y.

Dr. FRANK G. SEAMAN ('81), Seneca Falls, N. Y.

Dr. RICHARD F. DUNCAN ('89), Pleasant Valley, N. Y.

*For Recording Secretary,*

Dr. WILLIS G. TUCKER ('70), Albany, N. Y.

*For Corresponding Secretary,*

Dr. CHARLES M. CULVER ('81), Albany, N. Y.

*For Treasurer,*

Dr. SELWYN A. RUSSELL ('77), Poughkeepsie, N. Y.

*For Historian,*

Dr. EZRA A. BARTLETT ('79), Albany, N. Y.



*For Members of Executive Committee (term three years),*

Dr. HERMAN BENDELL ('62), Albany, N. Y.

Dr. HENRY E. MERENESS ('74), Albany, N. Y.

Dr. WILLIAM L. ALLEN ('81), Greenbush, N. Y.

Dr. ROBERT BABCOCK ('84), Albany, N. Y.

On motion of Dr. H. Bendell, the report was accepted and adopted, and ex-president, W. H. Bailey was instructed to cast a ballot on behalf of the association for the gentlemen named therein. This having been done, those named in the report were declared by the president duly elected officers of the association for their respective terms.

The corresponding secretary presented the following:

REPORT OF THE CORRESPONDING SECRETARY—  
DR. C. M. CULVER.

Among the answers which I have received, from our fellow-alumni, to the announcement card, are photographs, which have been placed in the alumni association's collection, of Drs. C. Richards ('53), Charles H. Smith ('54), R. F. Carr ('55), H. Van Wert ('56), H. B. Maben ('57), T. E. Wilcox ('64), Meredyth Woodward ('67), W. W. Betts ('83), M. Keenan ('88) and A. R. Brundage ('90). We are fortunate enough to have Dr. Smith here in Albany with us, his address being 246 Washington avenue. Dr. Carr is in Argenta, Ill., and he sends a pleasant note with his portrait. Dr. Maben, is in Kingston, N. Y. Dr. Woodward is Surgeon-General of the state of Michigan; in the letter which accompanies his photograph, he tenders us his best wishes for the success of our meeting to-day. Dr. Betts is in Minneapolis, and regrets that he cannot celebrate this season with us. Drs. R. E. Hyde ('68), S. A. Russell ('79), O. F. Kinloch ('79), E. E. Maryott ('82), F. W. St. John ('87), C. W. De Baun ('87), M. Keenan ('88), and G. G. Lewis ('90), have written expressing their intention to be with us to-day. Happily, some of them have been able to keep good those good intentions and are here among our number now. Among letters expressing the regret of certain of our fellow-alumni, because of their inability to meet with us to-day, is one from Dr. Edward F. Quinlan of the class class of '68, in which he writes: "Looking back over nearly a quarter of a century the reflection comes to me that I will soon be looked upon by the younger members of the association as a patriarch, and yet my memory, my thoughts and my actions are as young as the youngest of the band of earnest workers just graduated from your college-halls. Time has wrought many changes in that long period; but, to me, my alma mater remains the same, and its interests and its prosperity are still very dear to my heart. Please convey to my fellow-members my regrets at my inability to meet with them, on the day specified, and assure them that I will be with them in spirit, if not in person."

Dr. James M. Wheat sends an expression of regret at not being able to meet with us here, from Redlands, Cal. As a part of a very pleasant letter, Dr. Wheat writes: "It is gratifying to feel that the prestige of the Albany Medical College is sustained, that its early laurels do not droop and that its teachers and alumni have been an honor to it. Progressive knowledge has

added new chairs of professorship to the school, thus widening its stream of usefulness. Hoping that stream will ever flow smoothly and deep, I have the honor to affix my autograph, as one of the alumni of 1853."

Dr. E. V. Stoddard, of the class of '63, writes, from Rochester: "It would give me great pleasure to be present, as it has not been my privilege in many years to do so. Through you I would express my kindest regards and best wishes for all who may be present; with hopes that this may be the largest and most enthusiastic meeting yet held."

Dr. S. W. Austin, of the class of 1854, writes from Cataract, Wis., that he regrets not being able to be with us to-day, but trusts he may do so "at some other season, in the near future." He expresses many wishes for the success of the institution.

Dr. J. N. Rippey of the class of '62, reports much prosperity for himself, and extends to all the class of '62. his cordial greetings, and wishes that all may enjoy the sunshine of love and and prosperity, through all the lengthening shadows of life.

Respectfully submitted,

C. M. CULVER.

The recording secretary announced the order of the exercises for the afternoon and evening, after which, no further business appearing, the meeting adjourned.

### COMMENCEMENT EXERCISES.

The sixty-first annual commencement exercises of the Albany Medical College were held at Harmanus Bleecker Hall, on Wednesday afternoon, April 27, 1892, at 3 o'clock, in the presence of a large audience. The president of Union University, Harrison E. Webster, LL. D., presided, and upon the stage were seated the president of the board of trustees, J. W. Russell, Esq., the members of the faculty, officers of the alumni association and prominent citizens. The order of exercises was as follows:

OVERTURE—"Vaudeville,"	Koppitz.
PRAYER,	REV. J. MCC. HOLMES, D. D.
MUSIC—"Puritan's Daughter,"	Balfe.
ESSAY,	HARRY SEYMOUR PEARSE.
MUSIC—"Said Pasha,"	Stahl.
CONFERRING DEGREES,	By the President of Union University, HARRISON E. WEBSTER, LL. D.,
MUSIC—Cornet Solo, "Spring Song,"	Mendelssohn.
	MR. GEORGE DORING.
ADDRESS,	REV. GEORGE T. DOWLING, D. D.
MUSIC—Gavotte, "Little Coquette,"	Bendix.
VALEDICTORY,	LEO FRANK ADT.
MUSIC—Characteristic Sketch, "Darkies' Jubilee."	Lansing.
REPORT ON PRIZES AND APPOINTMENTS.	
BENEDICTION.	
MUSIC—Waltz, "Return of Spring,"	Waldteufel.



The following is a list of the graduating class:

Leo Frank Adt,	- - - - -	Waterbury, Conn.
Patrick Joseph Barrett,	- - - - -	Cohoes, N. Y.
Le Roy Becker,	- - - - -	Central Bridge, N. Y.
Robert Woodworth Bell, Jr.,	- - - - -	Albany, N. Y.
Henry Hobert Bradley,	- - - - -	Bradford, Pa.
John Charles Brown,	- - - - -	Albany, N. Y.
Donald Gillies Buchanan,	- - - - -	Troy, N. Y.
Henry Beaman Burton,	- - - - -	Troy, N. Y.
Fred Bellinger Casey,	- - - - -	Mohawk, N. Y.
Albert Crocker Cobb,	- - - - -	Marion, Mass.
Frederick Joseph Cox, A. B.,	- - - - -	Albany, N. Y.
Peter John Dervin,	- - - - -	Clinton, Mass.
Bennett White Dewar,	- - - - -	Oneonta, N. Y.
Peter James Fagen,	- - - - -	Albany, N. Y.
George Michael Fisher,	- - - - -	Newport, N. Y.
Eugene James Gallagher,	- - - - -	Mongaup Valley, N. Y.
Washington Irving Goewey,	- - - - -	East Schodack, N. Y.
Bert Louis Goldthwait,	- - - - -	Troy, N. Y.
Homer J. Grant,	- - - - -	Pittsfield, Mass.
John Butler Grover,	- - - - -	Luzerne, Pa.
Arthur Clesson Hagedorn	- - - - -	Gloversville, N. Y.
George Sherman Haswell,	- - - - -	West Troy, N. Y.
Robert Aloysius Heenan,	- - - - -	Albany, N. Y.
Stanton Hendrick,	- - - - -	Walton, N. Y.
John Byron Hull,	- - - - -	Berlin, N. Y.
Frank A. Husted,	- - - - -	La Fayetteville, N. Y.
William P. Kelly,	- - - - -	Pittsfield, Mass.
William Grant Lewi, Ph. G.,	- - - - -	Albany, N. Y.
William Alexander Liddle,	- - - - -	Amsterdam, N. Y.
Howard Eaton Lomax,	- - - - -	Albany, N. Y.
Charles Harrison Loveland,	- - - - -	Wevertown, N. Y.
Elmer Ellsworth Martin,	- - - - -	Greenbush, N. Y.
Duncan McNab, Jr.,	- - - - -	Troy, N. Y.
Frederick Ammi Mead,	- - - - -	Gloversville, N. Y.
Charles Benjamin Mosher,	- - - - -	Johnstown, N. Y.
Leo Handel Neuman,	- - - - -	Albany, N. Y.
Charles LaMont Parker,	- - - - -	Camillus, N. Y.
Chauncey Adams Patterson,	- - - - -	Walton, N. Y.
Harry Seymour Pearse,	- - - - -	Albany, N. Y.
La Rose Rancour,	- - - - -	Albany, N. Y.
Elmer Ellsworth Reichard,	- - - - -	East Schodack, N. Y.
Smith Malon Roods,	- - - - -	Saratoga, N. Y.
Walter Buskirk Rossman,	- - - - -	Albany, N. Y.
Charles Robert Seymour,	- - - - -	Binghamton, N. Y.
Ira Earnest Shaffer,	- - - - -	Rhinebeck, N. Y.
Willard Hamilton Sweet,	- - - - -	Petersburgh, N. Y.
David Lewis Taylor,	- - - - -	Oneonta, N. Y.
Franklin Stuart Temple,	- - - - -	Boston, Mass.

---

Clement Frank Theisen,	-	-	-	-	-	-	-	Albany, N. Y.
Lansing Van Auken, A. B.,	-	-	-	-	-	-	-	West Troy, N. Y.
Clarence David Vrooman,	-	-	-	-	-	-	-	Cockburn, N. Y.
Franklin George Warner,	-	-	-	-	-	-	-	Glens Falls, N. Y.
Alfred George Wilding,	-	-	-	-	-	-	-	Malone, N. Y.
Frederic Allen Williams,	-	-	-	-	-	-	-	Rock Ledge, Fla.

---

Dr. Vander Veer presented the prizes. He first read a report on the Vander Poel prize endowed by Mrs. Gertrude W. Vander Poel, in memory of her husband, the late S. Oakley Vander Poel, M. D., for many years a professor in the college, stating that this prize, consisting of a microscope and accessories, offered to the senior student passing the best bedside examination in general medicine, had been awarded to Leo H. Neuman; and at the same competitive examination, the following hospital appointments had been made: Albany Hospital, Leo H. Neuman and Charles B. Mosher; St. Peter's Hospital, Willard H. Sweet and Eugene J. Gallager.

The prize offered by Dr. Vander Veer, for the best report of the surgical clinics, was awarded to Howard E. Lomax, and the prize offered by Drs. Hailes and Morrow, for the second best report of these clinics, was awarded to Charles B. Mosher.

The prize, consisting of an ophthalmoscope, offered by Dr. Merrill, for the best report of the eye and ear clinics, was awarded to Howard E. Lomax.

The prize offered by Dr. Townsend, to the student passing the best examination in physiology at the end of his first year of study, was awarded to William W. Clark.

Dr. Boyd's prize, to the student passing the best final examination in obstetrics, was awarded to Harry S. Pearse.

Dr. Bigelow's prizes, for the best dry preparations of the throat and of the nose, were awarded to James M. Moore and Charles W. Hamm.

The prize, consisting of a case of surgical instruments, offered to the senior student passing the best final examination, by Dr. T. W. Nellis, was awarded to Leo H. Neuman.

The prize offered by Dr. H. R. Powell, to the second year student passing the best final examination, consisting of a general operating case, was awarded to Thomas W. Jenkins.

A prize, consisting of Gross' complete pocket case of



instruments, offered by A. B. Husted & Co., to the first year student passing the best final examination, was awarded to James Burton.

### ALUMNI LECTURE.

By invitation of the executive committee, Dr. Theobald Smith ('83), of Washington, D. C., delivered a lecture in Alumni Hall, on Wednesday evening, at eight o'clock, on "Pathogenic Bacteria in Drinking Water and the means employed for their Removal." The room was well filled with members of the association and citizens, and the lecture was listened to with close attention. Having been published in full in the May number of the ALBANY MEDICAL ANNALS, it is not reproduced here.

### ALUMNI DINNER.

The nineteenth annual dinner of the Alumni Association was held at the Delavan House, on Wednesday evening, April 27, 1892, at eight o'clock. Nearly two hundred were present, including members of the association, their guests and members of the graduating class. The *Menu* was as follows:

Little Neck Clams.	
Green Turtle aux Quenelles.	
Salmon Trout Boiled. Anchovy Sauce.	
Queen Olives.	
Potatoes Hollandaise.	
	Gherkins.
Lobster Chops, a la Diable.	
Filet de Boeuf Pique aux Champignons.	
Cream Spinach.	
Chicken Croquettes, a l'Allemande.	
Punch a la Romaine.	
Spring Lamb, Mint Sauce.	
Green Peas.	
Lettuce Salad.	
Gelee au vin de Champagne.	
	Glace a la Heliquin.
	Gateaux Assortis.
Fruits.	Cheese.
Demi Tasse.	

After the tables had been cleared, cigars passed, and the "Alumni Ode" sung, the following toasts were responded to, Dr. Herman Bendell acting as toastmaster:

1. "Our Alumni Association," Dr. S. H. Freeman, president-elect.
  2. "The Day we Celebrate," Dr. H. R. Powell, the retiring president.
  3. "The Clergy," Rev. Dr. James McLeod.
  4. "The Legal Profession," Joseph A. Lawson, Esq.  
A song was then sung by the glee club.
  5. "Union University," President Harrison E. Webster, LL. D.
  6. "The Orator of the Day," Rev. Dr. Geo. T. Dowling.  
Another song was then sung.
  7. "The Faculty," Professor Maurice Perkins.
  8. "The City of Albany," Professor O. D. Robinson.
  9. "The Class of '92," Dr. William A. Liddle.
- The "Parting Ode" was then sung to the tune of "Auld Lang Syne," and President Burton, in a few remarks, declared the reunion of '91 at an end.

---

**Contagious Diseases.—Monthly Statement.**—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department of the City of Albany, for the month ending May 31, 1892:

	Cases.	Deaths.
Typhus fever .....	0	0
Typhoid fever .....	10	1
Scarlet fever .....	86	23
Cerebro-spinal meningitis .....	0	2
Measles .....	78	2
Diphtheria .....	15	3
Small-pox .....	0	0
Varicella .....	3	0



# THE Albany Medical Annals

---

VOL. XIV.

JULY, 1892.

No. 7.

---

## ON SURGICAL KIDNEY, WITH SPECIMENS.\*

By A. VANDER VEER, M. D.

Gould's Dictionary defines surgical kidney as a name sometimes given to pyelo-nephritis, or distension of the kidney, attendant with inflammation, abscesses of the cortex, and retention of urine mixed with foetid pus.

Billing's Dictionary, as kidney disease following disease or wounds of the bladder, prostate or urethra.

The International Encyclopaedia of Surgery says, "many morbid conditions of the kidney, the result of disease of the urethra, prostate or bladder, or occurring in cases of paralysis necessitating the use of the catheter, or after surgical operations upon the urinary organs, are grouped together under this head."

In presenting the subject of surgical kidney I desire to draw from the pathological studies, that cover this branch of surgery, a few practical lessons. I may say deductions, from cases that have come under my own observation, and which have brought with them a just consideration, such as should be given by every surgeon who enjoys not only the comfort of seeing his cases recover, but who also continues a necessary interest in the fatal conditions resulting in death, the latter bringing lessons of value to his fellow beings.

By surgical kidney I mean that condition of the pelvis, cortical or medullary portion of the kidney in which we have located suppurative lesions, either in the form of multiple or large abscess, due to causes that originate within the kidney, or such as arise from other lesions within the genito-urinary tract, and the cases of which I am to speak will illustrate somewhat.

---

\* Read before the Albany County Medical Society, March 9, 1892.

The recognition of a surgical kidney is not by any means an easy task. There may be enlargement of the organ, that can be made out by palpation; there may be some marked tenderness present on direct pressure; the urine will contain pus, and more or less albumin, but an entire absence of casts of any form is quite characteristic. We know that the slightest causes and the gravest conditions of the genito-urinary tract may alike lead to this state of surgical kidney, and when once a kidney is brought into this chronic condition, as it may be called, it may go on for some time doing its work, in that the functions of the malpighian bodies continue, the straight uriniferous tubules perform their work. The organ has assumed, as it were, a toleration of conditions, but which when once aggravated tends to a metastasis that rapidly terminates in the death of the patient. By this, I mean, that a simple stricture at the meatus, or any portion of the urethra, may kindle up that inflammatory condition that causes cystitis, ureteritis, pyelitis, and then an interstitial form of nephritis, which in itself may produce multiple abscess.

Again, the simple introduction of an instrument into the bladder may bring about all of these conditions or may develop a more serious complication like those cases in which the instrument itself carries into the urinary tract the streptococci, and which, as it were, arrests the functions of the kidney, producing a suppression of urine, in like manner as does chronic abscess of the kidney, and death results. Also we may have a vesical calculus form within the bladder, from external causes, producing a train of symptoms in which the kidney becomes the objective point of abscess.

Again, the kidney itself, from the pathological changes that result from renal sand, renal gravel, from pyelo-nephrosis, or from frequent attacks of renal colic, bringing about precisely this condition called surgical kidney, and yet may be tolerated for months or years, until a volcanic eruption occurs from some surgical interference.

Let me illustrate somewhat more my subject by presenting the following cases. I know that it is far more pleasant to report and listen to a list of cases where nothing but recoveries follow the work of the surgeon, but, on the other hand, I believe by reporting the fatal cases, we, in a measure,



gather from them such lessons as ultimately result in an increasing percentage in our recoveries, by reaching the cases at a more favorable time.

I have now done close on to one hundred operations for removal of stone in the bladder, and from the kidney, and cannot yet call to mind a fatal case from hemorrhage, from shock, or from any local condition directly traceable to the operation; but have to report these cases in which, could I have known the true condition of the kidney, it would have been better for my statistics had I not operated at all, and yet these same cases were not to be excluded by any means from the chances of a successful operation.

Case 1. Mr. C. G., age seventy-five, married, native of United States, farmer by occupation. Family history good; previous history good. Admitted to Albany Hospital May 9, 1890. About ten or twelve years ago, while living in Madison county, drank considerable hard water. At first had periodical attacks of renal colic, coming on at irregular intervals, but usually after a hard day's work. These would last a varying period and then he would be free for some length of time. About two years ago, while lifting a heavy trunk, he felt a sudden pain, very sharp, in bladder; this pain has been present ever since; frequent micturition; pain at end of glans, penis and along perineum; pain after urinating; urinates best when lying on side. No history of kidney complication, aside from renal colic. Prostate gland very much enlarged. On examination a large stone was diagnosed. Urine examined with care; no casts of any description to be found; albumin present, but in small quantities; pus not abundant. Bladder was carefully washed previous to operation. In consideration of the amount of cystitis present it was deemed best to do the supra-pubic operation. Patient was put upon iron and quinine for a few days, and operation done May 16, 1890. Ether administered. He recovered nicely from the anaesthetic, wound remained in good condition, drainage was perfect, and in every way he progressed favorably until the morning of May twenty-third, a week after the operation, when symptoms of suppression presented, patient became listless and indifferent to his surroundings, passed into a condition of stupor, and died, comatose, May twenty-fourth,

thirty-six hours after the latter symptoms presented. Post-mortem examination showed left kidney much contracted, giving every evidence of old abscess, and which had quite entirely destroyed the cortical and medullary portions. The right kidney was of usual size, contained very many abscesses in the medullary portion, as well as considerable pus in the pelvis of the kidney, which you will here observe. These kidneys were in no condition, as will be observed, to bear the strain of a surgical attack made upon any organ of the body. The left kidney undoubtedly was the kidney that had given evidence of renal colic, and the passing of renal calculi, some years previously.

Case 2. Mr. L. L. H., aet sixty-five, married, native United States, a sheriff by occupation. No history of venereal disease. For past twelve years has been troubled with renal colic; sharp, tearing pain along right ureter; drawing up of testicle; twenty of these attacks in all; four or five days after each attack stones of a reddish color, with jagged edges, the size of a mustard seed to a kernel of corn, passed through urethra. Five years ago, after one of these attacks, while micturating, flow of urine suddenly ceased, could feel stone in urethra, could not milk it out, a surgeon incised meatus to remove it. Past year has had considerable pain on passing urine, stream smaller. Past few months almost constant pain in bladder, and marked pain in glans penis. Drinking water at home apparently devoid of lime salts, and is generally boiled before using; has been away from home considerably and drank freely of all kinds of water.

Admitted to Albany Hospital December 19, 1890. In this case the urine was examined, but no evidence of casts found, and while the patient showed a great and marked condition of suffering, with emaciation, loss of appetite, etc., still it was considered wise to attempt an operation for removal of stone. Owing to his dislike to the use of the knife, and in keeping with his desires, the operation of litholapaxy was determined upon. It proved a very severe operation, as the stone, which you will here observe, was exceedingly hard, and required much time to crush and wash out. Duration of operation, about fifty minutes. Operation performed December 21, 1890, after patient had been put upon quinine and



tincture of iron. He seemed to recover well from the operation, was perfectly rational, fairly free from pain and suffering, but the secretion of urine was very small. He continued in a very comfortable condition for forty-eight hours, and then, without any apparent suffering, sank rapidly into a comatose state and died within a few hours, December twenty-fourth. No autopsy secured, but I have no doubt that this man's kidneys were almost a counter-part of case No. 1.

Case 3. Mr. J. B. H., aet thirty-nine, married, native United States, farmer by occupation. This case is a good illustration that age does not protect one from this pathological state of the kidneys. This patient gave a history of renal colic, and of vesical irritation, extending back for a period of nearly nine years, but he continued on about his work (suffering greatly for the past two years), before presenting himself for surgical treatment. He had tried all forms of treatment, as regards medicines, but had not been told to have an operation done until a short time before his admittance to the hospital, when his attending physician recognized the importance of surgical interference. On admittance to the hospital an examination of the urine revealed much pus, considerable albumin, but no casts, and while the patient presented evidence of serious kidney lesion, yet it seemed advisable to proceed with the operation. Suprapubic cystotomy was decided upon in consequence of the extensive and severe cystitis and irritation that was present. Operation April 24, 1891. Ether administered. He recovered well from the operation, and continued in a fairly good condition up to May first, when evidence of suppression of urine presented, and he passed into an insensible condition, resulting in death May third. The kidneys, which I here present, exhibit the most marked appearance of long standing multiple abcess, a condition which was undoubtedly made much worse by the anaesthetic and operation.

#### CONCLUSIONS.

Case one clearly illustrates the importance of early and prompt attention to symptoms, such as this patient presented, and in which, had an early operation been done, before destructive changes had taken place in the kidney, he would probably have made a good recovery. From the size of the

stone, as you will observe, the nucleus (a renal calculus), must have entered the bladder early in the beginning of his symptoms.

At the time of operating the question presents whether it would have been better to have administered chloroform instead of ether, as the latter is now clearly shown to be a more dangerous anaesthetic, in the surgical kidney, than chloroform or the bi-chloride of mytheline.

Case two is almost a counterpart of case one, and shows the importance of always examining the bladder carefully after attacks of renal colic, especially if there be any evidence of vesical irritation. Had this man submitted to litholapaxy at the time when his bladder troubles first presented, he would probably have made a permanent recovery. Case three emphasizes more fully than words can express, the opportunity that was lost to him in not having an early operation, when the stone could have been crushed, and with a man so young as he, undoubtedly recovery would have followed.

Surgical kidney presents its most dangerous aspect in connection with stricture of the urethra. It is here that it gives its most alarming outcry, as soon as any attempt is made to treat the pathological lesions within the urethra. Simple dilatation, rapid divulsion, internal urethrotomy, external perineal urethrotomy, even the passing of an instrument for relief of retention of urine, have all in like manner precipitated in the surgical kidney an explosion of symptoms, such as suppression of urine, stupor, coma, death. It is true that so-called urethral fever is present in many cases, but there is a grave question whether the kidney has not already taken on something of this pathological change, having yet sufficient power to recover, and the patient goes on to a state of health. The practical lesson I would draw from the grouping of these cases, and the studying of them carefully is this, that we ought always to examine cases of vesical or urethral irritation with the greatest of care, and not allow our patient to be exposed to the danger of having fastened upon him the so-called surgical kidney. If ever we have a field in which to make use of preventive medicine, or, as I might say, to cut short serious operative surgical interference in a case, it is here. These cases all present the characteristic condition of



temperature, being not quite normal in the morning, and reaching as high as 103 in the evening; pulse quick, appetite gone; the tongue dry, coated and offensive; bowels constipated; skin dry and pungent and with a marked flatulent distention of the stomach and abdomen.

Each patient presented gradually a low, continued fever, death in the young person by coma, in the older ones by coma and partially by asthemia. The younger patient assumed more the characteristic symptoms of pyemia or septicaemia, not that of true sapraemia, neither one of the three giving characteristic convulsive seizures and the other marked symptoms of typical uraemic poisoning.

I would say, then, in these cases, treat the early symptoms promptly, and many cases will be entered on the side of recoveries that must inevitably later on succumb to surgical interference.

---

## DIAGNOSIS OF PLEURISY, WITH A PLEA FOR THE EARLY REMOVAL OF PLEURITIC EFFUSIONS.

By HERMON C. GARDINIER,

Instructor in Medical Diagnosis and Lecturer on Anatomy of Nervous System, Albany Medical College.

Pleurisy may be divided into plastic or dry, acute pleurisy with effusion, latent pleurisy, or, as Dr. Albutt terms it, quite pleurisy, with effusion, suppurative pleurisy or empyema. Plastic or dry pleurisy gives rise to few subjective symptoms, occasionally the process may be attended by pain of a stabbing nature and fever of a mild type, but more often the pains are fugitive, not localized may be referred to the loins or epigastrium, and nothing but a physical examination will discover the nature of the case, or perhaps a teasing cough is referred by the close observer to a patch of dry pleurisy in the chest. This form is mostly a conservative one, preventing often times destructive processes, such as phthisical ulcerations from opening into the pleural cavity. Auscultations reveals a friction rub, or perhaps instead of the friction a shower of fine, brilliant, high pitched unchangeable, explosive rales, which seem directly under the ear and are intensified by the pressure of the stethoscope. Percussion gives in most

instances negative results, unless there is considerable thickening when a dull sound is made manifest by tapping the chest. One may feel a pleuritic rub by placing the hand over the affected part. Inspection may show dipping of the intercostal spaces if the costal and pulmonary pleura are united, usually the lesions are not sufficiently extensive to impair vocal fremitus.

Acute pleurisy is usually ushered in by well marked symptoms. A robust person, for example, is suddenly seized with an agonizing pain of a cutting or stabbing character, seldom diffused, usually sharply circumscribed, beneath nipple in the sixth or seventh intercostal space, over the body of the scapula or below its angle. In children it may be referred to stomach or loins, and is very often accompanied by marked tenderness on pressure. The patient lies on his back or on the well side. He avoids lying on the affected side because the weight of his body would increase the pain. The breathing is rapid and superficial, and of the superior costal type. The patient instinctively fixes his diaphragm and tries to lessen pain by holding his breath, thus preventing the pleural surfaces from coming together. This produces considerable dyspnora, the ala nasi expand and collapse with respiratory movements, and this, with the peculiar pinched condition of the face, give the appearance of great distress. Sometimes the pain occurs only on deep inspiration. It may remain for several days, if the effusion comes on slowly, but if the effusion suddenly becomes large, the opposing pleural surfaces are now wide apart and the pain ceases. The cough may be dry and irritative, or it may be moist and attended with considerable expectoration, which is due to catarrhal processes in the adjoining lung. The pulse at first is small and wiry, and ranges from 80 to 120, denoting increased arterial tension, later when the effusive stage is established the arterial tension is lowered, with at the same time a diminution in the quantity of urine, which may contain traces of albumen or a few casts. This lowered arterial tension is due to the interference with the lesser circulation taking place in the compressed lung, for the right heart is unable to force the normal amount through the lesser circuit into the left side of the heart, and as the arterial system receives a less supply



the tension is lowered. At the onset the temperature may rise to  $101^{\circ}$ – $102^{\circ}$ , but in many cases not above  $100^{\circ}$ , as the effusion becomes marked the temperature gradually subsides if the case be uncomplicated. If the temperature remains high for a considerable time and is higher in the morning, and if by exploratory puncture a bloody serum is withdrawn, we may be confident in diagnosing a tubercular pleurisy. If the temperature takes on the hectic form normal in the morning and rises to  $101^{\circ}$ – $103^{\circ}$  in the evening, and patient has recurring chills with night sweats and emaciation, and we find on examination oedema of the subcutaneous tissues on the affected we would be justified in diagnosing suppurative pleurisy or empyema. This oedema is obtained by pressing a fold of the skin and soft parts between the index finger and the thumb. It is due to intense venous stasis. The sign was regarded as almost diagnostic by Fraentzel until Traube discovered it in a case of sero-fibrinous pleurisy which afterward became purulent. Pleurisies of young children are mostly suppurative or soon becomes so.

A rare form of pleurisy, of which Fraentzel has seen three examples and which he terms pleuritis acutissima, begins with a very severe chill; the skin is burning hot and very dry, the temperature is about  $140$  degrees, there is often violent delirium, the tongue becomes dry and brown. Thirst is excessive, the spleen is enlarged and can be distinctly felt. This condition he states is very apt to be diagnosed as typhoid, but the deeply cyanosed skin, and if the physical signs of pleurisy are present must set aside the idea of typhoid and be considered as a case of pleuretis acutissima. His cases resulted fatally.

When the effusion becomes large the patient lies on the affected side so as to give the well side a chance to expand, or he sits semi-erect and bent slightly forward so that the muscles of forced respiration may come into play. If the chest is nearly full and there is considerable displacement of the adjacent organs, there is added great dyspnoea, rapid respiration— $45$ – $80$  per minute—and cyanosis, which, if marked, is a very serious symptom, because it shows that the effusion is so great that the arterialization of the blood cannot take place. The patient in this condition presents a picture

of extreme distress, speaks to you in broken sentences, and is vigorously fighting to get air into the lungs.

Latent or quiet pleurisy with effusion begins quietly and is often unrecognized until the chest is laden with fluid ; if the patient had pain it was so trivial as to escape notice and the fever was so slight as to pass unrecognized. The chest gradually expanding by the slow effusion accommodated itself to the circumstance until the fluid had nearly filled the chest, then the patient may come simply complaining of dyspnoea on exertion, and to our surprise we find the physical signs of a chest full of fluid. This form of pleurisy is common and many cases of large pleural effusion run their course in this quiet manner.

During the early or first stage of pleurisy with effusion, inspection may show limited motion on the affected side. We may feel a distinct pleural rub, with feeble or distant respiratory murmur. During the stage of effusion inspection shows diminution or absence of movement of affected side while the unaffected side plays vigorously ; the intercostal spaces are often effaced but rarely bulged unless the effusion is very large. If the effusion is left sided the heart is pushed to the right, the apex may be seen near the left edge of the sternum to its right or beneath right nipple, or may be concealed by the sternum or in rare instances may be pulled backward and inward by pleuro-pericardial adhesions. If the effusion be great the mediastinum may be displaced so far to the right as to interfere with the action of the right lung. The diaphragm may be so depressed that it produces an evident bulging in the epigastrium. Right-sided effusions displace the heart to the left, the displacement not being so great as when on the left side. The liver is displaced downward and its edge may be felt below free border of ribs. Sometimes in left pleural effusions the side may pulsate resembling somewhat that of an aneurism, but more often there is an external pulsating tumor which is usually single but may be double. It only occurs where chest is unusually distended with as Traube thinks pareses of the intercostal muscles, and will, on the withdrawal of a small amount of fluid, be abolished, showing that a certain degree of pressure is necessary to its production.

Palpation will locate in most instances the exact situation



of the apex beat and the displacement of the other visera, and if we get the patient to count there will be an absence of vocal vibrations below the level of the fluid ; we are also conscious by placing the hand over the affected side that no expansion occurs during inspiration.

Of the physical signs of pleuritic effusion percussion is the most significant, the note devoid of pulmonary quality, short in duration and high in pitch with the accompanying resistance which the finger as a pleximeter receives is certainly diagnostic if indeed it ought not to be termed pathognomonic. In the early part of the effusive stage when the effusion is but slight impaired resonance or dullness may be elicited posteriorly at the extreme base, with light percussio. As the effusion rises the impaired resonance gives place to flatness with a resistance to the finger which is characteristic.

Now, to obtain this flatness in moderate effusions, the person percussing should tap lightly, because where the effusion is moderate the under-lying lung is not as is generally supposed, compressed but merely collapsed, and may be set into vibration and lend a vesicular or tympanitic note when strong percussio is used and thus deceive the observer. The effused fluid does not assume its hydrostatic level as in an open vessel. Dr. Calvin Ellis in the Boston Medical and Surgical Journal for 1874-1876, described a curved line, which is now commonly spoken of as Ellis's line. This line begins in moderate effusions rather low down behind, extending upward reaching its highest point in the axillary region and then passes in a line with slight declivity toward the sternum. Why does this occur? The reason is simply this, in moderate effusions the lung is not compressed it is simply collapsed and as the diaphragm remains in its arched position, the aspiratory force of the contracted lung holds the fluid up, and as the lung is collapsed in more or less of a triangular form toward mediastinum with the base of the triangle downward and forward, the fluid assumes in reason of this its letter of S. curve. From the preceeding one can easily see that the percussio note is lowest in the back, highest in axillae and gradually slopes off toward the sternum anteriorly. It is taught in most text-books that provided the fluid is not encysted or localized by adhesions it will on

changing the patient's position assume a different level. This is not correct save in effusions sufficiently large to efface the Ellis line, because when the Ellis line is present the fluid is held in position so to speak, by suction and cannot change its level; but when the effusion is very large and the diaphragm is depressed then the aspirating force of the lung is lost and it is compressed, the fluid now being free to move in all directions does change its level. In rather extensive effusions in front from the clavicle to the third rib, you get on percussion what Skoda calls a tympanitic note more or less raised in pitch, but which Flint call vesicula-tympanitic i. e., the vesicular resonance has added to it a tympanitic quality. This is due to the percussion setting in motion vibrations produced in the dilated lung tissue. When the effusion becomes large and almost fills the chest then just beneath the clavicle or near the sternum a cracked pot resonance is generally obtained. Traube has described a space in the lower anterior portion of the left chest which he calls the Semi-lower Space, and which gives a tympanitic percussion note in the normal condition of the stomach and transverse colon which lends to it its quality. This space is bounded below by the free border of the ribs and begins above near the sternal junction of the fourth rib, and extends backward to the eleventh rib. If the lung is forcibly expanded this space is narrowed, whereas if the left lung is contracted by tubercular or other disease, the space is enlarged and hence is of diagnostic importance in determining the contracted condition of left lung. But in pleural effusions sufficiently large to push the diaphragm downward taking with it the stomach and intestine effaces this space and instead of a tympanitic note, you get flatness: On the unaffected side the note is hyperesonant, which is due to temporary compensatory emphysema. There are cases of very large effusions which displaces the mediastinum sufficiently to give rise to marked impaired resonance on the normal side. Much confirmatory evidence is to be obtained from auscultation. A friction sound may be heard during the early stage, with interrupted and jerky inspiration due to the intense pain.

The respiratory murmur is feeble, distant or suppressed and lacking in intensity and duration.



When the effusion is moderate the friction sound disappears or perhaps may be heard at the level of the fluid, while below its level there may be absent respiratory murmur and voice or perhaps bronchophony distant and diffuse or its modification with a bleating or nasal twang, called by Laennec aegophony, is usually heard at the level of the fluid; both of these voice signs usually indicate a thin layer of fluid, but they may be present when no fluid exists, and therefore are not diagnostic. In the scapular, inter-scapular and high axillary regions bronchial breathing may be heard distant and diffused, lower in pitch, less close to ear unaccompanied by moist sounds, muffled and softer in quality than the familiar high pitched tubular breathing of pneumonia. One must not be deceived and hastily conclude especially in children and sometimes in adults that he has to deal with a pneumonia if he hears bronchial breathing high in pitch, with marked increase of vocal resonance over the whole side posteriorly, that this does occur there is no doubt. I have several times seen such cases and many gentlemen present this evening doubtless have listened to such cases where nothing but percussion or the use of the aspirator will decide. The above conditions has been very ingeniously explained by the telephoning of the bronchial voice or murmur along bands of adhesions or by the great density of the fluid (pus!) when the effusion is very large and the bronchi much compressed there may be an entire absence of respiratory and voice sounds. Auscultation in many instances gives one a clew to the exact position of the apex beat. Sometimes during the early or declining stage a pleuro pericardial friction sound may be heard and it may be confusing to distinguish it from a pericardeal rub. It may be heard during suspended breathing, but is more feeble than during ordinary respiration. It is due to cardiac impulse against the roughened and inflamed pleura after slight adhesions have occurred. During the declining stage, if the lung fortunately re-expands friction sounds may be heard with the respiratory murmur at first distant and muffled gradually approaching nearer to the ear, and having more of a vesicular quality. At the extreme base numerous crackles may be heard during deep inspiration due to re-expansion of the compressed lung and a dilatation of the air cells.

Before alluding to treatment, I wish to call attention to the dangers attending large pleural effusions. First let us see the results of pressure. The outward pressure, against the thoracic parietes must of necessity greatly retard the return circulation, both of the bloodvessels and lymphatics, hence absorption cannot take place without assistance, as a result of this retention numerous false-bands are apt to form and form very effectual splints to retain the already compressed and carnified lung. What effect has this on the heart? The right ventricle, as a result of the impeded circulation through the lesser circuit, is over-filled, and its walls are liable at any moment to become paralyzed from sudden distension resulting in cardiac thrombosis and sudden death, or it may happily undergo hyperthrophic dilatation and by its compensatory action sustain the patient until he is relieved by mechanical means. Or if not relieved some sudden exertion produces a little more extra strain and the patient has a sudden and fatal attack of oedema of the opposite lung. Secondly, it is well known that through the retractive or aspiratory force of the lungs the venous blood is drawn into the right side of the heart. Now, in large pleural effusions with compressed and carnified lung, a considerable share of the aspiratory force is lost, and as a result the venous return to the right side of the heart is retarded, thus favoring venous stagnation and the formation of thrombi, this condition is of importance especially in left sided effusions where the heart, in its already crippled condition, is bodily forced from its natural position so far to the right as to produce a bending of the vena cava ascendens as it appears through its diaphragmatic aperture, and this, together with the slow venous return, is very apt to be attended by a thrombosis at that point with sudden and fatal syncope.

With an exact knowledge of the fatal results that may happen in large pleural effusions and of the deleterious consequences of their too long retention, the question arises: How shall we treat them? Shall we allow nature to effect a cure when we can in a few minutes remove an effusion which may take weeks or perhaps months to be absorbed, with, perhaps, as a result, spinal curvature and retraction of the chest



walls or retention of the heart in its displaced position with, in many cases, the formation of tubercle ; or shall we remove the fluid at once, giving the patient the chance of a perfect recovery? It is my conviction, after having aspirated many times, that in large pleural effusions with displaced visera we should aspirate at once, not waiting for dyspnoea or orthopnoea to arise and to remove as much fluid as possible *without inconvenience to the patient*. It may be a gallon or a pint, discontinuing the operation short of producing dyspnoea, cough, pain or sense of thoracic constriction. I do not believe as has been advised in the removal of only a pint at one sitting, for I have seen at least three cases where had there been removed but a pint the patient would probably have been dead at the next visit. The operation should be done closely following the rules as laid down by Dr. Bowditch. Before performing the operation the physician should see that his instrument is in perfect order, that the needle is aseptic, and he should render the portion of the chest which is to be the site of puncture perfectly aseptic. With these precautions and the use of a small dome trocar there is not the slightest risk of wounding the lung or of permitting the entrance of air or diseased germs.

To prove the safety and efficiency of the operation I have tabulated a number of cases from the records of some eminent physicians. "Dr. Bowditch has operated 400 times without a fatal result and with but one case where alarming symptoms occurred. Dieulafay operated 200 times without an unpleasant symptom. Dr. Donaldson has aspirated the chest 150 times with no bad results. Fraentzel did 160 operations with no after results, and Dr. Mason operated 122 times with no unfavorable symptoms, and in over half of his patients but one aspiration was required, making in all over 1,000 operations without a fatal result. When shall we operate? Loomis states that after waiting one week, if the fluid does not recede we should aspirate, or if the chest is half full of fluid and is rising we should aspirate without further delay. Dr. Bowditch advises the use of the ordinary drugs to promote absorption for two or three weeks, if during this time dyspnoea or slightest orthopnea should supervene to aspirate. He never confines himself to a

pint or a quart, but withdraws all the fluid he can, watching constantly for the slightest distress, dyspnoea or cough when he immediately desists.

In latent pleuritic effusions he advises us to aspirate at once, for as he says "there is no telling at what moment the chest may become suddenly filled and thus jeopardize the life of the patient." I believe in the prompt removal of the fluid without waiting for the subsidence of the fever or the slow absorbing power of drugs. For at an early stage of the effusion the lung is merely collapsed and not compressed, it will in most cases re-expand upon the withdrawal of the fluid and a second operation may not become necessary. If proper aseptic precautions are adopted, little apprehension need be entertained of the fluid becoming converted into pus. The statistics of the early removal of the fluid are very promising, particularly so in regard to the expansion of the lung which to the patient is of most vital importance. Castiux has operated very early in thirty-seven cases, removing all the fluid obtainable. All his patients recovered, and none required a second operation.

It has been my custom to aspirate very early in all cases of moderately large pleuritic effusion, not waiting for the subsidence of fever or the efforts of nature or the slow absorbing or eliminating power of drugs. In not a single instance have I regretted acting promptly in these cases. In the twenty cases which have been under my immediate care during the past five years, and treated in the manner above described, all save two have done well. Fourteen of the number required but one aspiration, with as a result, perfect expansion of the lung, return of the dislocated heart and no retraction of the chest walls. Three cases required a second aspiration, which operation removed very much less fluid than at first, with the same result as the above. Three cases required repeated aspirations, one of which made a good recovery, the other two which were tubercular from the onset (as was proved by finding the bacilli in the sputum) did well as far as the aspiration was concerned but died later of tuberculosis.

I have treated cases in the ordinary manner with diuretics, absorbents, blisters, iodine, salt method, restriction of fluid, etc., and never have seen as rapid result as by early aspera-



tion. Fever unless very high which is unusual, unless due to tuberculosis, is no contra-indication in my mind to an early aspiration. In most instances the fever subsides after the operation. The lung expands perfectly, the visera regain their normal position, and the patient usually makes a prompt recovery.

---

**Results of Army Hygiene.**—Sir Joseph Fayer in his address to a section of the Hygienic Congress of last summer, stated that the death rate of English soldiers stationed in India in 1859 was sixty-nine per 1,000. Since that time certain changes in housing, food, water, clothing, etc., have been adopted, with the result that in 1886 the rate was 15.18 per 1,000, and in 1888 it was 14.84 per 1,000. The rate among the native troops was, for 1886, 13.27 per 1,000, and in 1888 12.84 per 1,000.

Professor Stokvis, before the same congress, stated that since the Dutch had introduced artesian wells to furnish water for their soldiers in India, dysentary and cholera had greatly diminished. While the percentage of deaths among Dutch soldiers in India from 1874 to 1878 was 15 per 1,000, it was in 1879 to 1883 only 6.4 per 1,000, and from 1884 to 1890 it was only 3 per 1,000.

Dr. Von Coler, director-general of the medical department of the Prussian army, stated that in the years 1888 and 1889 alone 79,500 less men applied for medical treatment than the average number for the ten preceding years. The death rate had decreased two-thirds in the same time, it being 6.9 in 1868, and 2.3 in 1889. He states that during the year 1890 they calculated that this decrease saved the lives of 1,500 men, besides the gain to the army of a less number of men on the sick list. This great saving of life and suffering, and the immense saving to the country of expense of the best men of the empire he attributes to the teachings of hygiene and improved sanitation as practiced in their army. As army statistics are generally regarded as more reliable than those collected from cities, these figures speak impressively on the value of preventive medicine.—*Sanitary Inspector.*

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XV.—No. 7.

JULY, 1892.

\$1.00 A YEAR.

---

The month of June was prolific in the meetings of medical societies. The American Surgical Association met at Boston May thirty-first, June first and second, and was fairly well attended, considering the extreme point in the east at which it was held. The different sections of the United States were represented by some of our ablest men in the practice of surgery. There were a number of excellent papers presented, especially the one offered by Dr. Roberts, of Philadelphia, on "The Treatment of Uncomplicated Fracture of the Lower End of the Humerus, and of the Base of the Radius." In the treatment of the former lesions, Dr. Roberts was very earnest in employing the straight splint and dressing the arm in the extended position, in preference to the angular splint, but while he maintained his position with great ability and great earnestness, yet it was evident that the association did not agree with him entirely in his views. The paper by Dr. John Homans on "Fibroid Tumors of the Uterus," was just such an able paper as would be expected from so competent and thorough a surgeon as he is. He handled the subject in a straight-forward practical manner, thoroughly honest in his statements, clear in his conclusions—and his experience, as presented, will certainly be of great value to the profession. It was well discussed, all of which will appear in full in the transactions.

Dr. Dandridge contributed a very able paper on "The Surgery of the Tongue," especially in reference to carcinoma, giving clearly and definitely the pre-cancerous stage, its



symptoms, and also a clear description of the different varieties of operations upon this organ. This paper was also discussed in a very clear and concise manner. There were many other papers presented of great value, all of which will in due time appear in the transactions, and doubtless a large number will find their way into our medical journals. One of the excellent features of this meeting was the visiting of the different hospitals, on different days, by the Fellows of the Association. The Children's Hospital, Huntington avenue, is a model of neatness and good discipline, and most capable work is being done there by Drs. Bradford, Burwell and Lovett. The two former gentlemen were very earnest in presenting a valuable number of cases, of different surgical lesions, to which children are subject. One very interesting case of gastrostomy in a child eighteen months old, at the time of the operation, was presented by Dr. Burwell, the child getting along very nicely, and now being fed through the opening in the stomach.

The visit to the Massachusetts General Hospital was made very interesting by the attending staff, and surely they are to be congratulated upon the admiral work that is being performed by them. Dr. Homans did an abdominal section in his new aseptic amphitheatre, which presents a most excellent field for good work, and which is being so well accomplished by the hospital staff. Other cases of great interest were presented, such as cholecystotomy, and a variety of operations by Drs. Porter, Beach, Warren, Elliott and others of the staff. Their system of bandaging is as perfect as it is possible for any institution to present, and their technique in reference to operation, dressing, etc., thoroughly abreast of the times.

The visit to the Boston City Hospital was no less interesting. Both institutions are models of neatness, although it is but fair to say that some of the buildings of the Massachusetts General could be greatly improved, and the Boston City needs greater accommodations. The wards are at times overcrowded, and the cottage system of hospital structure is not carried out so thoroughly as could be desired, but the work done at the Boston City Hospital is of the best. Drs. Cheever, Gay, Post, Watson, Bradford and others of the staff presented many, very many, most interesting cases, and

gave a variety of operations to illustrate the technique in surgery of that institution. Surely Boston is to be congratulated upon having such excellent institutions and so ably conducted by surgeons and physicians of national reputation.

The entertainments given to the Fellows of the Association by members of the profession in Boston was elaborate in every way.

Lunches here, dinners there, receptions at the clubs, steamboat trips on the river to see the sanitary improvements made in Boston within the past few years for disposal of its sewage, and proper construction of water works, all added to the pleasures of the occasion.

Therefore, it can be truly said that the meeting of the American Surgical Association in Boston, for 1892, will be remembered with much pleasure by the Fellows who were so fortunate as to be present.

In electing Dr. Nichols Senn, of Milwaukee, as president, for the coming year, the association did itself credit. He represents the surgery of to-day in a most favorable manner, and has achieved a reputation, not only in this country, but abroad, a reputation in which very few men are his peers.

---

We will not attempt to speak in detail of the many other societies, which met at various places in the country during the month of June, but speak more especially of the meeting of the American Medical Association at Detroit. Beyond a doubt for scientific work, in certain sections, this was the best meeting held in many years. The people of Detroit certainly acquitted themselves with great credit in the earnest effort made to entertain the members of the association and make each and everyone thoroughly welcome. All was done that was possible by the citizens of this grand, and growing city. The members of the association and their friends enjoyed each and every hour of the days of the meeting.

In the general meetings of the association there were some lively discussions; the position taken by the judicial council in reference to Dr. W. W. Potter not being qualified to act as a member of the trustees of the journal, was not by any means a liberal view. The outgrowth of the discussion,



however, must tend to do good. A most excellent committee was appointed by the association to take into consideration the revision of the Code of Ethics and its By-Laws, and it is to be hoped that a liberal spirit will be manifested by those members, and the Code of Ethics be put more in unison with the spirit that governs such questions, throughout the world. The relation between the American Medical Association and that of the Medical Society of the State of New York are likely to receive an honorable and just solution. A committee of five was appointed by the association to meet with five who are to be appointed by the Medical Society of the State of New York, and five from the New York State Medical Association to discuss the relations of the three societies. If this is done in a spirit of fairness and with an earnest desire to bring about a proper understanding of the question of the Code, etc. (no doubt which can be done,) the profession of the United States will rejoice in seeing harmony restored. The next meeting of the association is to be held at Milwaukee, and will be very important in the settling of many of these questions of the Code, and advancing to a more complete doing of scientific work.

Regarding the latter the association is to be congratulated on its appointing an executive committee before which all questions not strictly scientific are to be referred, and which will take from the general section a great deal that leads to endless discussion and little good.

The election of Dr. Hunter McGuire, of Richmond, Va., as president, was a most admirable one. He has a reputation for advanced, liberal ideas in medicine and surgery, and is a man who has a national standing—justly earned.

## ANNOTATIONS.

**Freudenthal [W] on Poisoning by Creosote.**—The author thinks it somewhat remarkable that in view of the recent extensive use of cresote, no cases of poisoning therefrom have yet been reported. This is all the more remarkable because we know that the two or three drop doses with which we at first contented ourselves are practically inert and that to do any good the remedy must be vigorously pushed. Dr. Freudenthal relates one case bearing on the topic. His patient, a woman, aged thirty, gradually increased her dose up to 300 drops daily. From this begins the history of the poisoning as follows:

On January 29th, eleven a. m., she took the usual 300 drops and went walking, but not feeling well, returned shortly and drank a glass of wine. Still feeling weak, she thought of the drops, which at all times had helped her greatly, and thereupon took another dose of 300 drops for quicker relief. The results were of the most exciting nature. She had hardly strength to drag herself to her bed, where she lay unconscious for eight or nine hours. When I saw her, late in the evening, she looked like one in narcosis. Her eyes were closed, and she was suffering and blowing incessantly, her breathing being stertorous. There were loud, coarse rales, which could be heard from a distance, over the whole chest. She was in a state of intense trismus [lock-jaw]. the teeth were so tightly clenched that it was impossible to separate the jaws. Her lips were cyanotic, and the pupils were contracted and did not react. There was a general loss of sensibility and paralysis of all reflex movements. Her pulse was 128, and the respiration about 30. She urinated in bed, but the bedclothes were not blackened. The urine of a light color. After watching the patient awhile, I saw signs of gradual recovery. Holding ammonia under her nose, she slightly moved her head. A mustard foot-bath was given, and ice applications were made to the head; then she awoke and felt no disagreeable results, nor did she feel any evil consequence of this intoxication during future treatment.

Concerning the treatment of poisoning cases in general, Dr. Freudenthal says: "In the future, should you meet with a case wherein these simple remedies do not have the desired results, I would draw your attention to the following note: 'The question as to whether the antidotes, consisting of the soluble sulphates, which are so efficacious in carbolic-acid poisoning by cresote derived from beech-wood, has been studied by Hare, of Philadelphia. It will be remembered that these substances unite with carbolic acid, forming sulphocarbates, which are virtually innocuous. In these experiments it was



found that animals receiving very large poisonous doses of creosote could invariably be saved if soluble sulphates in sufficient quantity were administered.' To Mrs. H's history I will add that after the intoxication she again took the creosote, but was obliged to begin, as she was at all times after a pause, with small doses, increasing them so rapidly that she very soon reached 300 drops. At last the dose was increased to the extraordinary large amount of 500 drops twice daily; then pneumonia on the left side developed, but she is now convalescing.

Creosote is undoubtedly a strong poison and must naturally have poisonous effects, either taken without graduation in a large quantity or, as my patient did, increased (although accustomed to a large dose) suddenly to a larger one. On the other hand, there are but few remedies that one can become so easily habituated to, and which the organism can for so long a time bear as well as creosote.

When Beverley Robinson, supported by others, states that the patients in the United States cannot take creosote in large doses, I disagree with him, and firmly believe that there are many in this country who can bear very large doses, and for these the more we administer the happier results we obtain.—*N. Y. Medical Record*.

**The Therapeutic Value of Electricity.**—In September, 1891, an electro-therapeutic congress was held at Frankfort, Germany, and another in Philadelphia, Pa. The proceedings of both these congresses have been published and have received considerable attention. The methods and aims of the two meetings were, however, in singular and instructive contrast. While the Philadelphia congress devoted itself to the publication of new methods, new instruments, successful results, and in general, to the exploiting of electro-therapeutics, the Frankfort congress took directly the opposite course. The single aim in all the discussions was to find out if electricity did any good whatever; if so, in what class of cases and by what methods. Throughout the meeting there prevailed a thoroughly critical and scientific spirit, which we trust our American electro-therapeutists will in the future endeavor to emulate.

A perusal of the transactions of the Frankfort congress and of some German articles published about the same time on the same subject, leads one to the conclusion that electricity comes out fairly well as a therapeutic agent, and that it will hold a good place in the armamentarium of the physician. The "happy therapist" who has somewhat imbibed the opinion that "electricity is life," with all the jocund and deep-seated powers which that implies, will feel, perhaps, disappointed over the actual curative effects which have been found to be possessed by the electrical current. But there is enough in it to help him and his patients a great deal, after all

In paralyses due to injuries or disease of the peripheral nerves, electricity, while not a specific, does good in promoting and hastening cure, or in starting into activity again a stagnant reparative process.

In organic diseases of the spinal cord, electricity seems to have no direct effect upon degenerative or inflammatory processes. Yet there are occasional exceptions, and in most cases some indirect benefit results from stimulation of muscles and peripheral nerves, or by modifying the central circulation.

In organic diseases of the brain, it has never been thought by serious persons that the electric current could directly modify inflammation or softening. But the mechanical and psychic effects are often profoundly useful. Wernicke's theory that stimulation of the paralyzed muscles tends to develop new sensory-motor areas, and furnish new centres in place of those injured, is plausible and has some clinical support.

There is a general agreement that electricity has a curative effect on many forms of neuralgia, and a sedative and helpful effect on many kinds of spasmodic troubles. Electricity, however, has been supplanted by the analgesics in the treatment of acute attacks. Great confidence is expressed by the French school in the use of faradism in Basedow's disease; and all agree that in neurasthenic and hysterical conditions electricity is of value. Whether its action is "suggestive," or mechanical, or biological, does not much matter, except as a question of pure science.

The Franklinic electricity has been found to have a specific effect on metabolism; increasing it more than is done by other forms.

The effect of such discussions as were had at the Frankfort congress should be to make the physician more cautious in using electricity but more confident and intelligent when he does apply it.

It would be a most fortunate thing if some of our numerous medical congresses would take up and study critically others of our apparently well established remedies. Would cod-liver oil stand the test, or the hypophosphites? And that superiorly wonderful tincture of the chloride of iron; would it really prove better than iron rust? The question might be asked whether invalid humanity would not be better without strychnina, or alcohol, or Fowler's solution.

We trust some day to see the medical profession enter upon a phase of therapeutic regression.—*Medical Record*.

**The Objections to the Insertion of Drainage-tubes into Wounds.**—In *The Maryland Medical Journal* for November 14, 1872, Professor William H. Welch summed up the objections to the insertion of drainage-tubes into wounds as follows: "First, they tend to remove



bacteria, which may get into a wound, from the bactericidal influence of the tissues and animal juices. Second, bacteria may travel by continuous growth or in other ways down the sides of a drainage-tube and so penetrate into a wound which they otherwise would not enter. He has repeatedly been able to demonstrate this mode of entrance of the white staphylococcus found so commonly in the epidermis. The danger of leaving any part of a drainage-tube exposed to the air is too evident to require mention. Third, the changing of dressing necessitated by the presence of drainage-tubes increases in proportion to its frequency the changes of accidental infection. Fourth, the drainage-tube keeps asunder tissues which might otherwise immediately unite. Fifth, its presence as a foreign body is an irritant and increases exudation. Sixth, the withdrawal of tubes left any considerable time in wounds breaks up forming granulations and thus prolongs the process of repair and opens the way for infection. Granulation tissue is an obstacle to the invasion of pathogenic bacteria from the surface, as has been proved by experiment. Seventh, after removal of the tube there is left a tract prone to suppurate and often slow in healing. To these Dr. Halsted adds an eighth: Tissues which have been exposed to the drainage-tube are suffering from an insult which more or less impairs their vitality and hence their ability to destroy or inhibit micro-organisms.—*The New York Medical Journal*.

**International Dermatological Congress in Vienna.**—The second meeting of the International Dermatological Congress will be held in Vienna from the 5th to the 10th of September, 1892. Many of the most distinguished representatives of Dermatology and Syphilography from all countries have promised to present papers and the indications are that the meeting will be a great success from a scientific standpoint. The committee on organization, through the president, Prof. Kaposi, has extended a cordial invitation to the members of the American Dermatological Association and of the New York Dermatological Society, and others interested in Dermatology in this country to be present. The membership fee (five dollars) should be sent with titles of papers intended for presentation to the secretary for North America, Dr. Prince A. Morrow, 66 West 40th street, New York, or to the Secretary-General of the Congress, Dr. Gustav Riehl, Wien 1-20, Bellaria Strasse 12.

**The Pepsin Standard Advanced.**—There are many varieties of pepsin in market, differing widely in purity, activity and adaptability for therapeutic use. Whether pepsin be prescribed with success or failure depends on its quality. The physician prescribing pepsin

should demand in his prescription a pepsin product which he has convinced himself is pure and active and can be relied upon. By prolonged investigation of digestive ferments the standard has been again and again advanced. It is announced by Parke, Davis & Co., that they have succeeded in making a pepsin capable of digesting 4,000 times its weight of coagulated egg albumen under the conditions of the pharmacopœial test. This product is prepared by a new and original process which renders it aseptic, free from odor, agreeable in tastes to the most sensitive palate, and superior to any pepsin product hitherto made. In these days, when novices and pork-packers are flooding the market with pepsins, it behooves the careful physician to see that his prescriptions are filled by the product of some reputable manufacturing chemist.

**On Taking Fluid with Meals.**—A great deal of misapprehension is often found to exist in the popular mind in regard to matters of eating and drinking. One of these misapprehensions to which we may refer is as to the injuriousness of taking fluid with meals. Upon this matter Mr. Hutchinson remarks in the last number of the Archives: "I observed with pleasure that the verdict of general experience and common sense has been confirmed by scientific experiment in the matter of taking fluid with meals. Dr. Tev. O. Straitievsky, of St. Petersburg, after elaborate trials, has found that fluids materially assist the assimilation of proteids, and announces the following conclusions, which is to be hoped no future experiments will controvert: 'On the whole the widely-spread custom of taking fluids during or just before one's meals proves to be rational and fully justified on strict scientific grounds. To take fluids with the meals is almost as important an adjunct to digestion as is the mastication of solid food preparatory to swallowing it.'"

It is obvious, however, that there is a limit to the amount of fluid one can swallow with impunity—with meals as at other times. It would be dangerous to create a general impression that fluid is good with food irrespective of quantity. It is, moreover, a well ascertained clinical fact that an excess of cumprandial fluid does retard digestion in certain people and gives rise to discomfort in most. A little attention to one's sensations in such matters will far better fix the desirable limit than all the "data" in the world.—*Medical Press and Circular*.

**Contagiousness of Influenza.**—Dr. Richard Sisley has recently published a little work on "Influenza," in London, in which he argues strongly for its contagious nature. He contends the beginning of a wide-spread epidemic is always announced by the occurrence of a few



isolated cases, that the disease follows the lines of trade and travel, and that prisoners, asylum inmates, and other isolated communities usually escape from the disease even when it is raging all about them outside of their enclosures. Dr. Sisley's views appear to have found ready acceptance, for only a few days ago a magistrate in Dover fined a number of sufferers from influenza £5 apiece for appearing in public before they had recovered from the disease. It's pretty tough to have the grip and then be fined \$25 besides, just on theoretical grounds.

**Damages for Lost Grafts.**—A novel action for damages is reported to be pending somewhere in the German Empire under somewhat curious circumstances. A nurse allowed skin grafts to be snipped from her lily white arm in deference to the wishes of the patient and the request of the surgeon. Unfortunately, the wound did not heal, as might have been anticipated, but proved the starting point of a cellulitis, causing great suffering, permanent disfigurement, and some loss of function. The nurse consequently feels aggrieved and claims damages from the surgeon.

**Bacteriological Investigations of Europhen.**—Dr. Siebel reports the results of his pharmacological and bacteriological investigations with Europhen. He finds that Europhen is a "dry antiseptic," the effect of which is similar to that of iodoform, depending upon the continuous liberation of small quantities of free iodoform, which in *statu nascenti* considerably impairs the growth of bacteria. The separation of iodine takes place as soon as the drug is brought in contact with moisture. This process therefore takes place within the organism when Europhen is subcutaneously injected in watery suspension into an animal. The liberated iodine can be readily detected in the urine. Even when administered internally [3 grammes per dogs] iodine is easily detected in the urine.

These pharmacological investigations of Siebel teaches that Europhen is to be regarded as a non-poisonous substance; iodine poisoning is not to be considered on account of the small quantity set free.

As to its effect upon the bacteria Europhen when sprinkled in a thin layer upon solidified bouillon agar, prevents the growth of inoculated cultures of spirillum, Finkleri, cholerae, microtetragenus and anthrax. Cultures of the staphylococcus pyogenes aureus and bacillus prodigiosus were considerably impeded in their growth. The bacterium pneumoniae and the typhus bacillus were less influenced, while the bacterium pyocyanus was not at all arrested in its development. In oily solution the anti-bacterial power of Europhen is still

more marked, and when properly employed in a ten per cent. oily solution bacteria of all kind were arrested in their growth. Europhen, however, has no bactericidal properties.

Europhen is also said to prevent the reduction capacity of bacteria having an anaerole growth, which was tested by adding to the nutritive medium [agar-agar] two drops of a two per cent. solution of indigo-carmin and then inoculating deeply with the staphylococcus pyogenes aureus. Although the control cultures within a short time had reduced the indigo-carmin to indigo-white, those cultures to which Europhen had been added were still blue-colored after the lapse of one month. This action of Europhen upon bacteria is entirely analogous to that of iodoform upon micro-organisms, and it is chiefly upon these properties, which belong to no other substitute for iodoform, that the therapeutic utility of Europhen is based, aside from the fact that it is devoid of the toxic and disagreeable effects of the former.

**The Threatened Epidemic of Cholera.**—The cholera is advancing from Central Asia into Europe. It has entered Russia at Baku on the Caspian sea, and has travelled eastward as far as Tiflis. Passengers from Central Asia on the Trans-Caucasian railway are quarantined for three days near Baku and forced, much against their will, to take a bath and change their clothing. The transportation of freight on the railway has been forbidden, and all food brought into the country is carefully inspected. The disease has appeared also at Astrakhan, and thence ascended the Volga to Saratov. The latter city is on the direct line of the trade route between Asiatic Russia and Moscow, and it is feared that nothing can prevent the epidemic invading this city in the very centre of the empire. The Russian authorities are reported to be doing the best they can to keep the disease back, and to enforce the observance of sanitary laws. Cholera has also appeared in Italy, five cases being reported at Brindisi, the terminus for most of the steamers plying between the Levant and Europe. A cablegram from Paris, dated July 16th, reports that there were twelve deaths from "cholerine" in the various suburbs of that city on Tuesday.—*Medical Record*.

**The Latest Thing in Suicides.**—Novelties in the suicide business have been plentiful enough of late. High jumps, ropes, pistols, poisons, and holes in the water will soon be out of fashion. Marguerite Borel has just introduced a new style, fin de siecle beyond a doubt. Her faithless lover, Paul Convert, deserted her. Marguerite didn't want to live, so she purchased in different drug stores an immense stock of



leeches. Then she went home to her nice little apartment in Boulevard de la Villette, Paris, where she undressed, liberated the leeches, and applied them all over her body. In other words, she modestly made an overcoat of them. Next morning she was found still alive and taken to the Lariboisiere Hospital, where she died.—*The Sun*.

**The Results of Two Hundred Labors Without Internal Disinfection.**—Mermann has continued in the clinic at Mannheim his usage in conducting labors without internal disinfection, and records in the *centralblatt fur Gynakologie*, 1892, No. 11, the results of 200 recent cases. He had but one death, and that from rupture of the uterus complicated by placenta praevia and a large amount of amniotic liquid. In the two hundred cases there were thirty-six which presented complications of greater or less gravity. These cases complete a series of 700, presenting no death from septic infection. The morbidity rate was six per cent. In the last 200 cases there occurred but two cases of mild ophthalmia, and in all less than ten cases of conjunctivitis were observed among infants. Mermann's practice is to omit injections, and, whenever possible, to also omit internal examinations, relying upon palpation and auscultation and a close observation of the case.—*American Journal Medical Society*.

**Sulfonal in Insomnia.**—The recent reports concerning the value of this hypnotic agent, affirm the earlier clinical conclusions that Sulfonal must be regarded as our best hypnotic. One or two observers cite some instances in which drowsiness has followed its use, and two cases are mentioned in which dizziness occurred after a sleep of ten hours produced by Sulfonal. The reported details seem to show that the doses administered were somewhat in excess of the amount of Sulfonal necessary to obtain a useful therapeutic effect. The weight of evidence, as shown in the very large number of cases thus far reported, would seem to demonstrate that Sulfonal is an active hypnotic, remarkably free from toxic influences of any kind, and especially available for the exigencies of general practice in the treatment of all forms of insomnia.

The value of Sulfonal in the neuroses has been widely tested by neurologists, whose published conclusions point to a wide field for the use of Sulfonal in this direction. In asylum practice Sulfonal has largely replaced the opiates and narcotics, and the reports agree that its use was not followed by the pre-somnial excitation and post-somnial exhaustion which so often supervens upon the administration of other sleep-producing remedies. It was noted also that the good effects of Sulfonal often continued for many days after it was withdrawn.

The question as to the liability of Sulfonal to induce a drug habit

has been considered by several investigators, all of whom report to the effect that such a sequence would be unlikely to follow a remedy of this nature. One observer presents the reason for this, as follows: "Drugs which give rise to habits are those which, like opium and cocaine, stimulate before they effect narcosis; the habitues take them for their qualities as incitant; Sulfonal is a pure hypnotic, and gives that effect alone." This seems to formulate the consensus of medical opinion upon this subject.

**The Medical Colleges of the United States.**—The following table has been prepared from the Report of the Commissioners of Education for the year 1888-89 (from Medical Age):

	No. of schools.	Professors and instructors.	Students.	No. of graduates at commencement of 1889.	Amount of State or municipal aid received within a year.	Benefactions.
Regular . . . . .	92	1,907	12,338	3,296	\$24,820	\$87,139
Eclectic . . . . .	9	116	669	186	.....	5,200
Homoeopathic . . . . .	14	249	1,159	312	25,000	16,004
Physio-medical . . . . .	1	11	15	5	.....	200
Post-graduate. . . . .	7	261	909	25	.....	19,600

**Contagious Diseases.—Monthly Statement.**—Report of the new cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department of the City of Albany, for the month ending June 30, 1892:

	Cases.	Deaths.
Typhus fever . . . . .	0	0
Typhoid fever. . . . .	4	0
Scarlet fever . . . . .	50	17
Cerebro-spinal meningitis . . . . .	0	1
Measles . . . . .	41	1
Diphtheria . . . . .	11	6
Small-pox. . . . .	0	0
Varicella. . . . .	0	0



## REVIEWS AND BOOK NOTICES.

A MANUAL OF OPERATIVE SURGERY. By Frederick Treves, F. R. C. S., surgeon to and lecturer on anatomy at the London Hospital; member of the board of examiners of the Royal College of Surgeons. With 422 illustrations. Two volumes. Vol. 1. General Principles, Anaesthetics, Operations upon Arteries and Nerves, Amputations, Excisions, Operations upon Bones, Joints and Tendons. Vol. 2. Plastic Surgery, Operations upon the Neck and Abdomen, Operations on Hernia, Operations upon the Bladder, Scrotum, Penis and Rectum, Operations upon the Head and Spine, Thorax and Breast. Philadelphia: Lea Bros. & Co., 1892.

This is a most admirable work, and one that will receive not only the endorsement or the active, operating surgeon, but will instill into the minds of the young practitioners ideas and lines of treatment that come only from a vast experience. This experience is expressed in language choice and clear, showing that the author has tested carefully various methods of operation suggested for the surgical lesions that present in one's practice, and has given endorsement to only the best. He has devoted the leisure of four years to the enormous labor of comparing the vast array of modern surgical procedures, and selecting those best fulfilling the indications in any given case. He has done that which must become the leading feature in the future text-books upon surgery, and that is leaving out traditional sentences which have become obsolete in many editions, i. e., conveying no good, true advice, but merely heresay thoughts. It is difficult to emphasize any one particular chapter; that upon the arteries and nerves is particularly good, while the one upon bones, joints and tendons justifies his reputation for profound knowledge of the subject. The operations in hernia are particularly clear, although this subject is one that is being rapidly condensed and unquestionably there will be some dissension as to his methods of treatment, perhaps more particularly by the surgeons of this country. The chapter upon head and spine is concise and clear, as well as the one on throat and breast. Taking the work as a whole, it may be looked upon as a good expression of English surgery, the author drawing largely upon all that has been contributed in that country. The publishers have done their work exceedingly well and the book will undoubtedly receive the endorsement of the profession.

A. V.

THE SCIENCE AND ART OF MIDWIFERY. By William Thompson Lusk, A. M., M. D. New edition revised and enlarged with numerous illustrations. New York, D. Appleton & Company. 1892.

A work so long and favorably known as Lusk's Midwifery, scarcely needs now an extended review.

It is seven years since the last edition of this admirable book was published; and in this new edition, the fourth, there are incorporated

the more recent discoveries, and all that there is of value in the progress of the science and art of midwifery since that time.

On account of so much new matter being introduced, and the rewriting of most of the chapters, the book is somewhat increased in size, and now contains over seven hundred pages.

It is a standard work and admirably adapted to the needs of practitioners and students.

This edition is well printed and attractively gotten up, as is usual with the books issued by Appleton & Co. H. V. R.

THE HARVARD MEDICAL SCHOOL ASSOCIATION has issued an interesting and valuable list of its members, which it will be glad to send to graduates of the Medical Department of Harvard University, in whatever part of the world they may be. The Association was formed about one year ago, and all graduates of the school are eligible to membership. The object is to unite all alumni and to advance the interests of the school and of medicine. The entrance fee and the annual assessment are merely nominal.

ANNOUNCEMENT.—IMPORTANT NEW TEXT-BOOK. MATERIA MEDICA, PHARMACY, PHARMACOLOGY, AND THERAPEUTICS. By Wm. Hale White, M. D., F. R. C. P., etc., Physician to and Lecturer on Materia Medica at Guy's Hospital; Examiner in Materia Medica Royal College of Physicians and Royal College of Surgeons, etc. American Copyright Edition, edited by Reynold W. Wilcox, M. A., M. D., Professor of Clinical Medicine at the New York Post Graduate Medical School and Hospital, Assistant Visiting Physician Bellevue Hospital, etc. To be printed in one compact, handy volume. P. Blakiston, Son & Co., Philadelphia.

#### PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets received :

L. D. Bulkey, M. D., on the causes of Eczema.

The Etiology, Diagnosis and Treatment of the Prevalent Epidemic of Quackery. By George M. Gould, M. D., Philadelphia, Pa.

The Pathology and Treatment of Tetanus. By D. Braden Kyle, M. D.

Traitment des Tumeurs Blanches. Dr. Lucas-Championniere.

Medical Society of the State of New York.

Zur Behandlung der Nervösen Magenkrankheiten. Dr. Weifsenberg-Colberg.

Medical Education and Legislation. By Geo. J. Engelmann, M. D.

The Bullous Form of Iodic Eruption. By Prince A. Marrow, A. M., M. D.

Some Differential Points in the Diagnosis of Syphilis and Tuberculosis with illustrative cases. By Prince A. Marrow, M. D.

Report on Capital Punishment. By The Medical Society of the State of New York.

On the Causes of Eczema. By L. Duncan Buckle, A. M., M. D.



# THE Albany Medical Annals

---

VOL. XIV.

AUGUST, 1892.

No. 8.

---

## SEMI-ANNUAL ADDRESS OF VICE-PRESIDENT OF THE MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

By T. F. C. VAN ALLEN, M. D.

Mr. Chairman and Members of the Society:—When considering what might be the proper significance of that term ‘Vice-President’s Address,’ I found myself quite at a loss. Address might mean so much, or so little; so many paths deviated from the outlook, leading toward every compass point. One might readily speak upon ethical topics—paying the compliment of criticism to proprietary compounds, mentioning the very doubtful distinction, made by many professional brethren, when they, with seeming conscientiousness, write prescriptions for some “Pharmaceutical Co’s Anti” this, or that, or H’s Compound, the composition of either of which they have no definite knowledge, from the farther removed brethren who prescribe Mrs. Winslow’s Syrup, some Pain Killer, or somebody’s sarsaparilla. The distinction between the physician who occupies—indirectly—an eighth of a newspaper column in having someone else tell concerning him that which his own excessive modesty prevented, and the doctor who directly occupies a column with announcements to the public of what he can do at his trade. The questionable ethical standing of the physician who receives from a patient his regular professional fees, yet when this same patient has some special disorder, requiring greater skill than his own for its successful treatment, does not hesitate to direct this patient to a charitable dispensary, explaining that

it will cost] nothing. Again, another matter, ethical in one sense; it would be hardly fitting for anyone to say that our society was a discourteous body, but let me mention that at a regular meeting of this society, at which a visiting physician was present by invitation and read a most excellent paper, only six or seven of the members attended. These are mere thoughts, suitable for our physicians to do a trifle of thinking about, suitable, any of them, for the subject of an address. They may here serve for an introduction to the statement that I have no address to deliver, but intend to report

#### TWO INTERESTING AND RARE CASES OF OCULAR DISEASE.

Mrs. C. S. G, aet 29, came to me December 21, 1888, complaining of some irritation of the left eye, which had existed for some six months. There was a slight conjunctivitis, but the most noticable feature was a thickening of the margin of the lower lid in the neighborhood of the canaliculus; this was not very marked, was not tender to pressure, and pressure over the the lachrymal sac caused no escape of any secretion from either puncta. She stated that infrequently tears collected in the eye, but never sufficiently to overflow the lid, her main objection being that the thickened lid "looked badly." There was no history or evidence of nasal catarrh. It was noted in the case-book that the trouble seemed to be with the canaliculus, the duct being probably patent. A simple astringent Collyrium was prescribed and the patient directed to report in a week. I next saw her August 16, 1889; the condition had not improved, and when out in the wind the tears would sometimes overflow the lid; no secretion could be pressed out, the punctum was in fair position. The opening of the punctum was enlarged by merely nicking with a probe-pointed knife, and a No. 2 Bowman probe introduced in the canaliculus for about a quarter of an inch, where it met with resistance, the canal was roomy and had a boggy feel. I left the city the next day for my summer vacation and directed her to consult another physician if she experienced any discomfort. I saw the patient again November 5, 1889, when she reported that the eye had felt much better for several weeks after the probing, when the old trouble returned. During my absence she had



consulted another physician, who regarded the trouble as a stricture of the nasal duct, and advised a radical operation for its cure, which she had declined. I introduced a probe-pointed knife and slit the canaliculus for about an eighth of an inch; a probe revealed much the same condition as previously described, by prying with the probe a small pear-shaped body was brought into view, its attachment was to the lower wall of the canaliculus, about one fourth of an inch from the punctum, this growth was removed by clipping the pedicle with a pair of finely pointed iris scissors, the bleeding that followed was surprisingly profuse. No after treatment other than a Boric acid collyrium was used. Ten days after the operation the incision had nearly healed, the thickening had greatly lessened, and the tears were following their proper channel. One year afterwards there was nothing abnormal about the lid and the patient stated that the eye had never given her any annoyance since the removal of the growth. Polypi, or granulations quite frequently spring from the edges of an incised canaliculus, and also originate from the membrane lining the lachrymal sac, when it is the seat of a Dacryocystitis. In the case just reported there was no history, no evidence of any preceding inflammatory disorder of either the duct, sac or canaliculus, and I regard the case as extremely rare. I present the specimen, which has shrunk slightly.

The second case is one of melanotic spindle-celled sarcoma, arising at the sclero-corneal margin, and firmly attached to the surface of the cornea. The case is one of Dr. Merrill's, my own connection with it being quite secondary. The patient, Mrs. A. L. P., consulted Dr. Merrill, at the Troy hospital, in June, 1889, for a black growth upon the left eye, firmly attached to the sclero-corneal margin, at the external angle, and to the surface of the cornea, beyond the pupillary region. The photograph taken at this time gives a fair idea of the size and position of the growth. The removal of the tumor was advised, and a doubtful prognosis regarding the probability of saving the eye, was given. The case entered St. Peter's hospital, and on July 12, 1889, Dr. Merrill removed the growth, the patient under ether. The operation was somewhat tedious, the attachments being very firm, neces-

sitating great caution in dissecting. A second growth, of the same nature as the first and of about one fifth the size, was situated below and was allowed to remain for the time, on account of the extensive surface already denuded. Some puckering of the conjunctiva could not be avoided when the sutures were applied. Dr. Merrill being absent from the city, the further care of the case passed into my hands. The eye reacted rather severely for forty-eight hours, and then quieted down. On July 22, 1889, I did a second operation, under Cocaine, removing the remainder of the growth; this proved quite painful on account of the extensive undermining of the conjunctiva that was demanded in order to cover the denuded surface and relax a number of contracted bands. Ten days after the last operation it was noted that inflammation had quieted down, the cornea was clearing, there was no pain, but a rusty infiltration was very evident, in the marginal corneal tissue, both above and below, also several spots on the conjunctiva. The patient left the hospital at this date, promising to return in one week. Nothing was heard of her for several weeks, when I saw her for a moment in my office, and noticed that the rusty infiltration was fully as marked as when she left the hospital. She stated that she saw quite well with the eye, and promised to call in a short time when I expected to have opportunity to test the vision and make a careful examination of the condition. Nothing more was heard of the patient until very recently. When I thought of reporting this case, I anticipated finding a satisfactory record in the case book at the hospital, but on searching for the entry found the patient's name, date of operation, no address, the adjoining leaf, on which would have appeared the history, or whatever may have been recorded, had been torn out.

I am greatly indebted to Dr. Sabin, of West Troy, for hunting up the patient, and in asking her to call and see me. Mrs. L. P. called on me March 31, 1892, and from her I learned the following history: She is forty-four years old; six years ago there first appeared a small red pimple on the white of the left eyeball, close to the cornea, it did not increase in size, or trouble her particularly, until her las



child was born, in the latter part of 1888, when the eye became inflamed and the growth rapidly extended over the cornea, shutting off her vision. In color, it was dark red at first, but grew darker, until in June, 1889, it was black and so large that the lids could not close over it. After leaving the hospital, August, 1889, the eye was comfortable and the sight rapidly improved until it was quite as good as that of the right eye. There is no family history of cancer. There is no history of injury to the eye either previous to, or after the operation; I mention this because of the present condition of the eye, a feature being present, of which I have no memory, and of which I can offer no definite explanation. I refer to a small opacity of the cornea, just below the centre, to which is attached a portion of the lower pupillary margin of the iris. I do not remember noticing any such condition previously, and am certain that the cornea was not perforated during the operation, though it was extremely thin. It seems probable that the cornea must have perforated after she left the hospital, and have produced so little disturbance that it was unnoticed. The cornea opposite the pupil is very transparent; the external margin is overlapped by adherent conjunctiva; the rusty infiltration has entirely disappeared; the eye shows no irritation whatever. The vision of this eye is nearly equal to the other. The right eye with spherical convex lens 1-10 has 20-40 vision; the left eye with spherical convex lens 1-12 has 20-40 vision; with the same correction Jaeger's No. 3 is read easily, at from thirteen to fifteen inches, with either eye. The Ophthalmoscope shows normal image, save a small opacity on the posterior capsule of the lens of the left eye. The patient's mother is living, is a healthy woman; has a Hyperopia of 1-6. A portion of the smaller growth was used for microscopical examination. I present the larger growth and what remains of the smaller; the tissue has shrunk considerably. The size of the larger growth was about three-quarters of an inch in length, one-half of an inch in width, and three-eighths of an inch in thickness; the pressure of the upper lid had undermined it somewhat so that the attachment was less than these measurements, the smaller growth was about five-eighths of an inch in length, and one-

quarter of an inch in width, it was attached to the ocular conjunctiva just below the larger growth.

The microscope proves the growth to be a melanotic spindle-celled sarcoma, the surface is very dense, the cells so compressed as to appear like thin plates; the deeper structure shows the character of the tumor very clearly; the amount of pigment is marked. Drs. Van Slyke and Mac Donald have examined a section of the growth and agree with me as to its structure. Tumors growing from the front of the eyeball, other than dermoid, are not common. The most exhaustive review of the subject is found in vol. viii, pages 145, 162, of Knapp's Archives of Opthamology, by H. D. Noyes, of New York city. In this article Dr. Noyes reports a case of Melanotic Epithelioma, which he removed from the front of the globe in October, 1878, and which, up to the date of this article, May, 1879, had not returned. The growth in this case was small, and not extensively attached to the cornea; the vision previous to the operation was normal, and twelve days after the operation was 20-20. Interested in what had been the outcome of this case, I wrote to Dr. Noyes asking him concerning it; in his reply of April 21, 1892, it is stated, "I last saw Mr. W. L. C. on February 7, 1883, when I made the following note: 'Faint patch of pigment deposit on the cornea, as indicated (inserted is a pen sketch, showing a pigment stippling of a quadrant of the cornea, extending nearly to the centre), a speck on caruncle, a faint brownish spot on the inner part of the upper lid, no tumefaction of tissue.'" In the article mentioned Dr. Noyes stated that he had examined the records of the New York Eye and Ear Infirmary for ten years, and out of 70,809 eye cases found but twenty-five tumors of the conjunctiva, and but three of the cornea, and undoubtedly most of these were dermoid and benignant. On examining the literature of the subject he found and tabulated 127 cases, of these twenty-six were Carcinomata, twenty-four Sarcomata, thirty Epitheliomata, cancer or melanosis, but no microscopic examination, twenty-seven; various, six; character not stated, fourteen; from this it is seen that the epithelial is the most common form, next the carcinomatous, then the sarcom-



atous. The pigmented tumors numbered thirty-nine, non-pigmented, seventy-four; not stated, fourteen.

The seat of origin of these tumors was most frequently the limbus of the cornea [31], next the cornea [26]. The greatest number appeared between the ages of forty-one and fifty years [22], next between fifty-one and sixty years [16]. Of these 127 cases the tumor was removed and the eye saved (no mention as to vision) in twenty-eighth cases, the eye lost after the removal of the growth in twenty-five cases; the eye removed with tumor in twenty-five cases; deaths, eight; no operation, five; facts unknown, 36. The percentage of cases in which the eye was saved was twenty-two per cent; forty per cent of the favorable cases were epithelial, eighteen per cent sarcomatous, an equal percentage of carcinomatous." These figures are very interesting, and while quite a proportion of the cases are without the support of microscopical examination, still they are encouraging to the surgeon who attempts to save the eye and perhaps useful vision, in these cases of malignant tumors of the front of the eyeball. The elements of success undoubtedly depend upon the extent of the attachment of the growth, and the possibility of thorough removal. It is seen from the case reported that even when marked pigment infiltration remain after the removal of the tumor, it may not mean recurrence but may disappear. The result as regards saving the eye, saving excellent vision and having no evidence of return of the tumor for nearly three years is very gratifying.

T. F. C. VAN ALLEN.

ALBANY, N. Y., May 3d, 1892.

---

## ON THE TREATMENT OF INJURIES TO THE PELVIC FLOOR.\*

BY JAMES. P. BOYD, M. D.

The pelvic floor comprises the tissues which together occupy the space between the bones of the pelvic outlet. It is made up of interlacing tendinous, muscular, and connec-

---

\* Read at the meeting of the Albany County Medical Society, April 26, 1892.

tive tissues, which stretch from the public rami and ischia to the sacro-sciatic ligaments and coccyx.

From without we find the skin, the muscular layers, with their aponeuroses, the subperitoneal cellular tissue, and the peritoneum. The levator ani muscle is the most important structure in the pelvic or perineal floor. This muscle is composed of two symmetrical halves attached in front to the inner surface of the body and horizontal rami of the pubes and laterally to the tendinous arch of the pelvic fascia which stretches from the inner border of the pubis to the spines of the ischia. Its fibers slope anteriorly downwards and inwards to the sides of the bladder and rectum, and posteriorly are inserted into a tendinous raphe extending from the extremity of the coccyx to the rectum. The transversus perinei muscle arises from the spine of the ischium and passes across to the median line where it joins its fellow of the opposite side. The coccygeus arises from the spine of the ischium and is inserted into the side of the lower part of the sacrum and side and front of the coccyx. The constrictor vaginae consists of two small lateral muscles situated upon the outer side of the vestibule and surrounding the vulvar orifice. Posteriorly the extremities of the main muscle start from the perineal fascia at a point nearly midway between the sphincter ani and the ischia, while a small bundle only is connected with the sphincter ani itself. Above the convergent ends separate into a superficial and deep portion. The superficial portions terminate in a tendon which unites them together above the dorsal vein of the clitoris. The deep portions pass between the upper ends of the bulbs and the clitoris and are also united by an aponeurosis. The ischio-cavernosi muscles form a sort of fibro muscular sheath about the crura of the clitoris; they are united together above by an aponeurosis which crosses the posterior extremity of the body of the clitoris. The sphincter ani is closely united to all the other muscles of the pelvic floor by an interlacing of the muscular fibers and by tendinous and fascial attachments.

The muscles of the pelvic floor form a complete diaphragm of muscular tissue which fills the pelvic outlet. By this arrangement the rectum and vagina are held in position and



their terminal ends controlled in the performance of their function.

The muscles of the pelvic floor are surrounded by the deep and superficial fascia which in some parts become ligamentous in character, for example the ischio-perineal ligament—that dense portion of the fascia which stretches from one side to the other through the space between the rectum and the vagina.

The injuries of the pelvic floor have been classified by Skene as follows :

(1.) The various degrees of laceration of the perineum, i.e. in the median line of the pelvic floor.

(2.) Subcutaneous separation of the muscles of the pelvic floor at their junction in the median line or so-called perineal body.

(3.) Lacerations in the median line and temporary loss of power in the remaining muscles from overdistension.

(4.) Lacerations of the levator ani muscle occurring alone or accompanied by the lesions already given.

(5.) Atrophy and permanent paralysis from injuries during parturition and other causes.

(6.) Loss of muscular motion caused by the products of former inflammation.

Dr. Emmett has said that the term laceration of the perineum is a misnomer, and if used at all, it should be applied only to the condition existing with laceration of the sphincter ani. He further states that we have been misled by the term "Perineal Body," for no such body exists save as an imaginary one.

The diaphragm formed of muscular tissue bound together by fascia is not different in structure in the so-called perineal body than elsewhere, and its only distinction in this situation is the accidental existence of more or less fat; but as this lies directly under the skin and anterior to the muscular structure its addition can give no support from its presence. The structure at this point simply holds in check the sigmoid curve of the rectum from encroaching on the vaginal canal, but could not even if such a body existed directly or indirectly give support to the vagina or uterus. It can

be clearly demonstrated that the uterus is supported and swung from above as is every other organ in the body, and is kept with the vagina and rectum in position by the connective tissue and fascia of the pelvis.

This fascia is in close connection with the cellular or connective tissue of the pelvis and is attached along the sides of the vagina and rectum, so as to prevent undue prolapse of the bowel from the sigmoid flexure to the anus.

Operations for Tear of Perineum through Sphincter.	Poserior Median.	{ Dieffenbach. Simon. Jobert de Lam- balle. Baker Brown. Hildebrandt. Seegar.
	Bilateral Asym- metrical in the Sulci.	{ Freund. Emmett. Stande. Cordell.
	Flap Method.	{ Voss. Duncan. Simpson. Saenger.

- { Antiseptic clean-  
liness.
- { Accurate Ap-  
proximations.
- { Rest of Parts.



## DISCUSSION ON DR. BOYD'S PAPER.

In reply to a question Dr. Boyd said : I have stated in my paper what my experience has been as to the results of complete and incomplete lacerations of the perineum that have been neglected, and I have become a firm believer in the necessity for the primary operation and to that end I always make a careful examination of the perineum. In fact always, as soon after delivery as possible, as soon as the placenta has been removed, I endeavor to determine the exact amount of the laceration ; at first, what has seemed a slight laceration very often gave me considerable trouble during the first week, from the fact that there was a great deal of discharge from the lochia more than seemed to be accounted for by the laceration, but my attention was called to this by Dr. Emmett especially in regard to internal lacerations and the necessity of correcting them. I am a firm believer in the repair of lacerations to the vagina as well as the perineum, and I think that many practitioners have made a mistake in frequently endeavoring to merely unite the skin and the muscles externally, forgetting that the lacerations almost invariably begin up in the mucous membrane of the vagina and that a very slight separation of the labiae would show without the speculum the tear running up either on the right or left side of the vagina or vaginal sulcus.

I find also that in very many cases the mistake is in neglecting to put in enough stitches in the vagina itself. Some two years ago I saw Dr. Emmett operate on a rectocele, performing his new operation and calling my attention to it. You can get no idea whatever from the plates in the text books, as I have endeavored to make them out from his own writings, and it was hardly satisfactory. After I witnessed him operate I saw that a great advance has been made in this direction. Probably no man has done more for perineal surgery than Dr. Emmett and there are very few who really understand his latest operation. It differs entirely from his previous operation and unless one sees it he can form no idea of the importance of it. I have adopted the method which he uses. So much for that. For the performance of this opera-

tion: It is too evident that many practitioners are inclined to make light of some of these ruptures, particularly the incomplete ones. The only question is when it shall be performed. Many will say that the patient is very weak, has lost too much blood, or complain of the time of day, and they will let it go until it is too late to do anything at all. There are very few cases that cannot be operated upon at once. After the operations are done the results are almost invariably a success; even in women I have delivered after a long and hard labor the operations have been a success. The practitioner can put off the operation until she has rallied and get assistance by getting some one to administer ether and getting the patient in good condition, but I think that one reason for some of the poor results following the operation is the fact that the practitioner has put his stitches in too superficially. I attended upon a case and after a long delivery with the forceps, I was tired out, the woman was exhausted; this was a case where I could not go on with the operation.

This operation is performed according to strict details, but still it can be easily done. I think that the real trouble with the practitioners is that they do not get the patient in a good light and in a suitable position and the operation cannot be done unless you get a proper condition and good light. After the placenta is delivered and the uterus firmly contracted, bring the patient to the edge of the bed and then have the light so it falls just over the shoulder of the operator and then separate to the labiae. I think you will rarely have to use a Sims speculum, because as soon as you separate the labia, you will get a good idea of the extent of the laceration. This is the important point. In many cases you will find what seems to be a long deep laceration, will prove to be a simple one and a proper one for you to get in your vaginal stitches first. Unless these stitches are placed deep in the vagina—it makes no difference how many stitches you take—you will have trouble and will not get good results. How will the vagina be syringed out? Bring the patient to the edge of the bed and then have the parts thoroughly cleansed. In all these cases I depend simply upon hot water and perfectly clean good sponges, which I always carry in my bag,



and a good light. Use hot water only. You get the surface so clean as to get a good idea of the extent of the laceration. There is always one feature about this, and that is, when the head gets on the perineum, it bruises the tissues and at first it seems utterly impossible to get the direction of the laceration, but with careful sponging with hot water you can get a clear idea. I have found in nearly all of my cases that the direction of the laceration is almost invariably on the right or left side of the vaginal sulcus—almost invariably on the side rarely, if ever, does it affect the columns; if once mapped out then it is not a hard matter to put the stitches in. In passing these many practitioners have been inclined to run the stitches through in the usual way, without including all the tissues. For the operation, of course after the parts have been thoroughly cleaned, the instruments needed are few. A few long and short needles, the ordinary pocket case is as good as anything; have sufficient silk or silk worm-gut. I always prefer to use silk for the vagina in order to do away with the necessity of taking out the stitches. The stitching of the vagina is not difficult, and in nearly all of these cases I find that it is not necessary to give an anæsthetic, because the parts are so blunted by the prolonged pressure of the head, that an anæsthetic is not called for. I take the needle in my finger or with a forceps, if it is very high. I find that when the lips are separated there is a bloody discharge from the uterus; this coming down from the seat of the operation won't bother you, unless you are working high up in the vagina. The skin is only involved a fraction of an inch; it is the tissues that is involved deeply. Stitch far enough to bring up the angle of the sulcus. I have followed Emmett's advice in passing the stitches. Usually you will find the surface in good condition for passing the needle. According to his operation he says to pick up the fine fibres of the levator and muscle, passing the needle in at the upper part of the vaginal sulcus with the finger in the rectum to protect that. Proceed close to the rectum and downwards bring out at the middle of the laceration then bring it directly upwards again, bring it out at the upper end close to the

labia so that when it is tightened it will bring the fibres in close approximation. The remaining small space you bring together with a few stitches and it is united by firm sutures. The whole surface is then sponged clean and covered with some gauze. Silver wire can be used but silk is preferable. The parts have to be perfectly clean and the limbs tied together. Generally the bowels are constipated for two or three days. I give some beef tea and broth and on the third day give some compound licorice powder; then move the bowel off with an ordinary enema. Remove the stitches on the eighth day and the results are almost invariably successful. If the rectum is involved, if it extends into the anus, then the sutures have to be applied with the utmost care, taking in the rectum first. For this I use a series of interrupted sutures, generally cat-gut. The stitching of the rectum is not as difficult as the bringing of the divided ends of the sphincter together. The ordinary suture will not hold it. I follow Emmett's advice in that particular using his circular stitch beginning with the needle just where the fibres are divided in the sphincter and passing it in a circular direction over the rectum and bring it out again on the opposite side so that it brings all the fibres together. It might seem that this stitch will tear through but it will hold pretty well. The after treatment is simple. It is rarely necessary to use even a vaginal douche. The first day I use boracic acid. In one case where there was oedema I used hot packs with good results. Most of the lacerations met with are incomplete, but I think that this point with regard to the management of the vagina is very important because there is almost certainly to be left a pouch. After looking at it you seem to have a perfect vagina, but you will find white lines indicating previous lacerations and no power in the sphincter at all; you get no resistance in passing the finger in. For the secondary operation there are a vast number of operations employed. If one picks up a text book he will find a number of diagrams and geometrical figures, that are designed to bring together these divided parts, and leave them just as they were before the laceration occurred. The earliest operation consisted in nothing more or less than simply uniting the labia, and it is



that which often gives such bad results after the operation. Then I have seen many cases where the perineum externally seemed to be all right, but the slightest examination revealed that the perineum had no power at all; the deeper parts had not been connected at all. The point which Emmett has made so much of should not be neglected. The German and English operators have advised a vast number of operations for the perineum, notably they have adopted the posterior median operation. One of the first operations that I ever witnessed was by a professor at the University of Strasburg, and I learned more with regard to the anatomy of the perineum from him than any other man; he took a great deal of pains in describing it. He showed the matter up in an entirely new light. I remember that he was very careful to go up into the deep sulcus, and then passing the vaginal sutures first, endeavoring to preserve the shape of the vagina, then after that, freshening the sides and bringing the lips of the wound together. Emmett's operation is nothing more or less than this operation, but carried a little further. Emmett carries it further up in the vagina, but his stitches are fastened in an entirely different way. Among those who have practiced the flat operation are Duncan and Tait. The practitioner to-day has a variety of operations to select from, but each must depend upon each particular case. One consists in uniting the labia, another which extends well up in the vagina and uniting the wound together. The Tait operation is rapidly coming into favor and is the favorite with the general practitioner. Two years ago when Emmet read his paper, Polk stated that they taught the Tait operation, they stated that the Emmet operation could not well be performed except by a specialist. The Tait operation has a great advantage in that there is no tissue removed; it is simply the flap splitting operation leaving the parts just as they were before. If care is taken in making the section you have ample tissue and it heals up well. The trouble of most of the German operations is, the necessity for removing such a large amount of tissue. The Tait operation does away with all that by splitting the flap across, and the perineum is brought together by sutures.

For the secondary operation I think where there is an incomplete laceration, that the ordinary Tait operation is quite sufficient. If, however, there has been very much stretching of the parts, a good deal of rectocele and the posterior vaginal walls coming down well, I do not think the Tait operation will be sufficient. In the last year or two in operating on a large rectocele I did the thing in a practical way by extending the Tait operation and bringing the flap well up almost to the urethra. I had a patient sixty years of age who could neither sit down or walk without this large mass rolling out. I simply extended the incision up to the urethra and it came out all right. There was no further trouble. She is now perfectly well and has had no further trouble. In another case, I followed Tait's operation; I ran up the sulcus and then stitched the tissues well up towards the side of the vagina. The operation which consists in removing an extensive section of the posterior vaginal wall; if there is another operation to do, it will be a troublesome affair. The Tait operation advised by me is different from the one ordinarily practiced in this country. One point that is important in his operation is that the deep stitches would be brought out close to the edges of the wound, and unless you get perfect approximation, there is always more or less trouble afterward. There should be cleanliness and septic precautions, and the edges of the wound should be brought together.

Dr. Devol: I should like to ask if you ever heard of subsequent pain in the liver from these lacerations.

Dr. Boyd: Yes; on some occasions, but they are too recent to give any points.

Dr. Devol: Have you ever known of a child to pass through the perineum without going through the labia i. e., through the rent.

Dr. Boyd: I only know of one case and that occurred in the practice of my father. I have never seen a case myself; they are certainly extremely rare.

Dr. Devol: I had such a case; the woman became a mother without having any father for the child and she was very delicate about the matter; she had the delivery private; I was called to see her and found her suffering from some



stomach difficulty; somebody had seen her before I saw her; I asked where the baby was and she said it was dead. I found the child in the privy.

Dr. Macdonald: I am very much interested in Dr. Boyd's paper on rupture and injuries to the pelvic floor. Men who are most interested in obstetrics and gynecology, have dwelt upon injuries to the perineum, both in text-book and lecture, at great length, and have given us a great many different opinions, some of which are widely divergent. The important factor in this whole matter, I take it, is a nice estimation of the real extent of the injury. We find very often no tear or at least a very superficial one followed by complete loss of the physiological action of the vagina and perineum. Dr. Boyd has very clearly attention to this class of cases. I have seen patients with a very considerable degree of prolapse of rectum and of the bladder. These cases were simply cases where we had a tear of the superficial tissues, on one or the other side of the vagina. I have seen cases again where they have been associated with considerable tear of the perineum. More properly speaking where operations had been done immediately, we find more precisely the same condition and sometimes we have a very respectable looking perineum from a simple inspection by separating the labia, when it was really of no value at all to the woman. Here I think the operation has done very little good from the fact that the tear in one or the other sulcus of the vagina has not been mended at the time. So far as ruptures to the perineum completely extending into the rectum, an operation almost invariably ought to be undertaken. While it is a fact that most men differ in opinion, as a rule they are agreed that an operation should be done at once. In repairing the perineum we use the continuous suture, we make one two, three, or four rows and when you get to the rectum, picking up the sphincter muscle will require modifications which it is very hard to explain except by seeing the operation. I hear a great many things regarding the operation, which to my mind as it has been done in this country, and some of the cases which I have seen, I do not think the results justified its popularity; that is the flap-spitting operation of Mr. Tait,

especially where we have a condition of rectocele and cystocele. We have to get a condition of support; we hold back the posterior vaginal wall giving it support so that it does not come out. They can get along pretty well for a time, but after one or two years we get further trouble. We may have a cul-de-sac of faeces which may lead to a condition of localized proctitis, which is very unfortunate for the patient. It seems to me that while we have that condition it is much better to make a deep indentation into the vaginal sulci very much in the manner of the operation first described, I believe, by Rischoff and subsequently modified; and one which Dr. Martin, of Berlin, uses. During my residence in Berlin, in cases which were brought back for examination, the results were perfect. It seems to me that the Tait operation is likely to become less popular. A number of American surgeons however are doing it every day, and I think it is likely to become an operation more as a matter of expediency rather than a matter of necessity.

Dr. Boyd: I agree with Dr. Macdonald in regard to the Tait operation. I have been doing it for a number of years. I limit it to a certain class of cases. I think the Emmett operation is much better, although it is longer. It certainly brings the parts into their natural relations, but as I said I think the general run of practitioners prefer the Tait.

---

### TRACHOMA.\*

By HERMAN BENDELL, M. D.

The limited time assigned for the reading of this paper, will not permit me to enter into detail on the "causes of Blindness in children," resulting from granular eye lids.

Trachoma is a disease insidious in its development, recognized by pathological changes in the conjunctiva, accompanied by inflammatory disturbances more or less pronounced in intensity and unlimited in its duration. The disease as a rule appears endemically—is principally observed in children past the age of five years, and in people of middle age. The disease is stubborn in yielding to treatment, and rarely cured without leaving traces of structural changes in the conjunctiva and cornea

---

\*Read before the Medical Society of the County of Albany, on December 30, 1891.



The progress of the disease, uninterrupted by treatment, generally leads to complications tending to a development of pathological changes, permanent in character and coupled with ocular deformity repulsive in appearance and embarrassing to the patient. It is admitted that spontaneous cures are of rare occurrence, and in a large percentage of cases the function of the eye lids and the acuteness of vision become more or less impaired.

Trachoma is a local disease, the theory of constitutional dyscrasia is disputed by many ophthalmic surgeons.

Pathological researches have proven beyond the cavil of argument, that the development and progress of the disease is due to a colonization and growth of a micro-organism, and that this specific germ, known as the trachoma cocus produces a pathological condition in the conjunctiva only. It is claimed that this micro-organism penetrates through the healthy epithelium, or more probably through an abrasion or opening of the conjunctiva and deeply into the cytogenic tissue, and to its presence are due the pathological changes characteristic of the disease.

It is instructive and interesting to trace the pathological process and development of trachoma from the entrance and deposit of this specific germ under the conjunctiva, to the termination of the disease, but to enter upon a minute and detailed analyses of the changes produced by the presence of the trachoma cocus in the conjunctiva is not the purport of this paper.

The germs of the disease, largely present in the purulent and muco-purulent secretion of the trachomatous eye, are by the use of towels and sponges soiled by the contagious secretions, or by becoming dried and circulated in the atmosphere, brought in contact with the conjunctival surface, and these factors are prominent causes of contagion.

The crowding of people in tenement houses, asylums, workhouses and barracks, where little attention is given to cleanliness, ventilation and proper sanitary provisions, is a condition favorable for the development of trachoma. It is also claimed that people living in the lowlands and in marshy districts, are more predisposed to granular eye lids than those

residing in higher altitudes. Also that the disease shows a special tendency to development among the Eastern races, especially the Egyptians, that it is prevalent among the Indian tribes of this country, and that it rarely occurs among the negroes.

The conditions and habits governing the poorer classes of all civilized races may be ascribed as prominent factors for the development of trachoma, but the asserted tendency of racial predisposition is a theory not substantiated by statistical information. In densely populated districts, where many of the inhabitants are compelled to live huddled together, where poorly equipped dwellings and want of proper sanitary provisions are active agents for the development of noxious conditions detrimental to health generally; trachoma is endemic. Among the nomadic races, especially among the Indians of this country, who live in tepees which as a rule are filled with the smoke of a confined and slow fire, and whose temporary and filthy habitations are pest houses for the development of infectious diseases, trachoma of a malignant type is not of rare occurrence. The same conditions that favor the development of granular eye lids among the Indians are common among the Eastern races, and in the densely populated districts of Russia and especially in the Russian army, the disease is a constant plague. However the fact must not be overlooked that even among the better classes, where proper hygienic surroundings, prudent habits and safe sanitation are not neglected, the disease is not uncommon.

My experience with patients afflicted with trachoma has not been limited to private practice, the dispensary and asylum have afforded ample opportunities to study the disease in its various forms and stages, and if knowledge gained by observation and practice is of value in determining the conditions and causes that favor the development of granular eye lids, I believe to be justified in saying, that the disease is the offspring of filthy habits and surroundings, a want of proper sanitation, and its appearance endemically is due to contagious influences.

Experience in the several forms of surgical treatment recommended for the radical cure of trachoma does not justify



me in the positive advocacy of any particular method.

It is evident however that the surgical treatment will eventually be recognized by the profession as the only reliable form of treatment for the permanent cure of the disease.

Much may be said in favor of the process of squeezing out the contents of the trachomatous follicles as recommended by Professors Knapp and Noyes. The method practiced by Professor Sattler of curetting the conjunctival surface, the treatment employed by Dr. George Lindsay Johnson, and the operation of grattage generally recommended by the French oculists. The changes in the lids and cornea, so disastrous to vision in the chronic form of trachoma, justify the employment of heroic treatment for the radical cure of granular eye lids. The failure of treatment by chemical agents, so generally prescribed and of so little good, should prompt the surgeon in the management of this ocular disease by a surgical procedure best calculated to erradicate the pathological products and destroy the vitality of the germ productive of the disease.

The causes productive of trachoma are best governed by preventative measures employed to control the conditions favorable for the development and extension of the disease. The spreading of this disease by contagion, especially among children in asylums, among soldiers in barracks, and in localities where people live in a crowded and unsanitary condition, is the principal factor to be guarded against.

For this purpose the enforcement of strict sanitary measures for the relief of the conditions above named are absolutely required. The number of cases resulting from contagion are far in excess of those due to other causes. Persons living in a crowded condition are brought in close contact with one-another, and under such circumstances the disease is rapidly transmitted from one member of a family to the entire household. In a similar manner it is spread among children in asylums and workhouses, and among soldiers in barracks. As a rule the outbreak of the disease in asylums may be traced to the admittance of a child afflicted with granular eye lids. The large percentage of asylum inmates afflicted with this disease, prompted an investigation into the causes of its frequent

occurrence, and led to the enactment of a state law, now in force, directing the examination of the eyes of all applicants for admission, and if such applicants are afflicted with any contagious disease, they are to be quarantined from the other inmates of the institution until safely cured. A violation of this law is punishable as a misdemeanor.

I regret that time will not permit a resume of statistical information showing the prevalence of this disease in the asylums of this and other countries. Dr. Richard H. Derby in a paper prepared for the committee on Hygiene of the county Medical Society of New York, reports that among 7,740 children in twenty-four asylums and residential schools 1,428 were afflicted with contagious eye disease. In one of our largest, best regulated and equipped asylums of this city, I was compelled to remove nearly one-half of the inmates to a temporary hospital, all of whom were suffering with granular eye lids.

Blindness resulting from trachoma in children is principally due to a want of proper treatment calculated to eradicate the disease before the pathological process has produced structural changes in the eye lids and cornea. The great danger arising from the disease is its tendency of spreading by contagion, for this reason the enforcement of such precautionary measures necessary to improve the conditions favoring a development of this disease, are essential and productive of endless good.

There can be no doubt as to the salutary influences of pure air, good ventilation, proper hygienic surroundings and attention to bodily health. All these are valuable adjuncts in the treatment of trachoma, but there is nothing curative in their employment. Thus far the advantages of surgical treatment, in preference to the methods generally employed, have been sufficiently tested to prove its superiority as a means for the radical cure, and the prevention of blindness resulting from granular eye lids.



---

THE MEDICINAL TREATMENT OF HABITUAL CONSTIPATION.\*

BY WILLIAM B. SABIN.

In opening the discussion upon the Medicinal Treatment of Habitual Constipation, I intend only to call your attention to a number of drugs with which I have no doubt you are all familiar. You are all well aware how difficult it is to effect a permanent cure for this common ailment of mankind, and in no class of cases which we are called upon to treat, is it more necessary to find out the cause, than in habitual constipation. When we fail to effect a cure by dietetic and hygienic methods, it is necessary to assist by medicinal agents. There are three ends which we must try and secure in our treatment of this disorder. First: To rid the intestines of the faeces and gases which distend it and thwart peristaltic action. Second: To tone the walls of the bowel and prevent the reaccumulation of faeces and their products of decomposition. Third: To increase the flow of intestinal mucus. In the medicinal treatment of habitual constipation, the most satisfactory results follow a course of tonics combined with some aperient, and among the most useful aperients may be mentioned Aloes, or its watery extract, Rhubarb—Colocynth—Podophyllum and Gamboge, either of which may be combined with ext. of Hyoscyamus or Belladonna—ext. of Gentian—ext. of Nux Vomica—Quinia—Sulphate of Iron or Ipecacuanha.

The aperient selected must be adjusted to each case, and no more or no less should be administered than to give a regular and efficient evacuation. You must be careful and not purge the patient as that exhausts torpid bowels and only perpetuates the constipation. The aperient should be occasionally changed in a long course of treatment and should be gradually dispensed with, while the tonics such as Belladonna—Quinia—Nux Vomica or Iron should be continued for some length of time.

Trousseau in his Clinical Medicine has great faith in the

---

\*Read Before the Albany County Medical Society January 27, 1892.

efficacy of Belladonna—as had also Brettonneau—and he says that he constantly prescribes Belladonna in constipation, giving it in the form of pills, each pill containing a centigram of the extract and as much of the powder of Belladonna. One of these pill is taken daily, fasting and preferably in the morning. The number of pills may be increased from one daily to two daily within the first five or six days. They seldom ought to exceed four or five in the course of twenty-four hours, all to be taken at the same time.

He says he is unable to tell the manner in which they act, but if persisted in faithfully a satisfactory stool is obtained daily, then as soon as the stools become regular, the Belladonna must be discontinued and the bowels allowed to act without assistance. In cases where the Belladonna proved unavailing he administered a teaspoonful of Castor Oil with it, which he repeated twice a week if required. There are some cases which resist the milder forms of treatment and require more active measures. We are then obliged to employ some of the purgatives. In regard to Saline purgatives while they are useful to a certain extent in some cases, in the majority of cases their action is too rapid and the intestinal secretions become diminished after their use.

About the same may be said in regard to Mercurial purgatives, while they are of great value in jaundice from catarrh of the bile ducts, and in cases where there is a deficiency of bile, in the treatment of habitual constipation they are of but little benefit.

Aloes is an efficient purgative where the constipation is dependent on weakness and impaired contractility of the muscular layer of the large intestine. A favorite combination for the cure of habitual constipation is that of the Aloes—Nux Vomica and Belladonna pill, or of the active principles, Aloin, Strychnia and Belladonna, one of these pills taken every night for a time and gradually diminishing their use, will often effect a permanent cure. Where the patient is anaemic, the aloes may be combined with bitters, Quinia, Iron and other tonics.

Another good pill is the Triplex pill, which is made up of Aloes—Blue Mass and Podophyllum and which acts very



efficiently in some cases. Podophyllum is another valuable remedy in the treatment of this disorder. When taken by itself it is apt to cause nausea and griping, but combined with other cathartics or with Belladonna or Hyoscyamus, it operates pleasantly and efficiently. The habitual constipation due to torpor of the muscular layer of the bowel can be often removed by the nightly use of Podophyllum, combined with Belladonna.

Colocynth increases the intestinal secretions and hastens the peristaltic movements, and combined with extract of Belladonna and extract of Physostigma, makes a very good pill in the treatment of this complaint.

The Compound Cathartic pill which is composed of the Comp. Ext. Colocynth—Extract Jalap—Calomel and Gamboge, is much used and by some highly prized, but when it comes to the prolonged use of it, is very apt to cause too much nausea and griping, and while very serviceable for simple constipation is not of so much value in the treatment of habitual constipation.

The Compound Rhubarb pill which contains Aloes and Myrrh is another good cathartic, but the Rhubarb taken alone generally perpetuates, by its astringency, rather than cures the trouble.

Sometimes the Extract of Physostigma in combination with Belladonna and Nux Vomica is quite effective when the constipation is due to torpor of the muscular layer of the intestine combined with deficient secretion of the mucous membrane.

There are a large number of Purgative waters, among which I may mention the Friedrichshall, Pullna, Hunyadi and Carlsbad waters which may be taken in the morning at times and aid in a well organized course of treatment. In closing I would mention a drug which was introduced by Parke, Davis & Co., called Cascara Sagrada and which has been quite extensively used either alone or in combination with other Cathartics and I think has deservedly won a place in the treatment of habitual constipation. Much more could be said upon this subject but I will leave that to the gentlemen present to discuss.

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XV.—No. 8.

AUGUST, 1892.

\$1.00 A YEAR.

---

**Conveyance of Tuberculosis by Bed-bugs.**—Dewevre (*Revue de Med.*, No. 4), reports the case of a boy, eighteen years old, who developed pulmonary tuberculosis after having slept with a brother who had died of the disease. A third brother, with whom the second had slept, had likewise died of tuberculosis. The patient presented numerous bed-bug bites, and it was learned that the bed in which he slept contained a large number of the parasites. Thirty of these were taken and used in the inoculation of three guinea-pigs, all of which died of tuberculosis. Cultures of tubercle-bacilli were also obtained from the dilute and filtered pulp of fifty of the bugs. Cultures were also obtained from bugs taken from healthy surroundings and brought into contact with the tuberculous sputum. The bugs must become infected directly from human beings, or indirectly through the medium of the expectoration, or by transmission from one animal to another. The transmission of tuberculosis from the bugs to the human beings remains an open question.—*Wiener Medizin Presse.*

**A Home-Made Vaporizer.**—Dr. E. R. Waterhouse, in *Medical Gleaner*, says: Allow me to give simple directions to make a vaporizer that is inexpensive, and at the same time as good as the best. It may be carried in the pocket or hand-bag. It takes up little room and is ready to use at any moment, by sliding the tube over the spout of an ordinary tin tea-pot that is always at hand.

Get an ordinary tin ointment box of two ounce capacity (say an inch deep, by two inches in diameter). Let a tinsmith punch a hole half an inch in diameter, through the bottom and also through the top (cover). To the bottom of this box have a tin tube soldered, three or four inches long, and slightly tapering, to slide over the spout of the tin tea-pot, so it will fit the different size spouts. To the cover another



tube is to be fastened in like manner, say eight to ten inches long, with a flanged mouthpiece, for the inhaling tube.

When wanted for use slip upon the tea-pot, which is to contain an inch of hot water; place in the tin box a sponge, upon which any remedy needed to be vaporized is to be poured; replace the box-cover, set the tea-pot upon the stove, or hold a lamp under it, and it does the rest.

It will be observed that the steam passes up through the sponge and whatever medicine is placed upon it is vaporized (if of that nature), and together with the moist, warm air, may be carried to all parts of the nasal and respiratory tract, and if properly applied, it will be productive of the most happy results.

For croup, saturate the sponge with compound stillingia liniment; cover the child's head and thrust the inhaling tube under the cover. For diphtheria, moisten the sponge with turpentine, or any other remedy you may desire to use. In bronchitis, terebene is a good remedy to volatilize, the same also in many throat troubles.

In treating contagious diseases the room may be disinfected by keeping the tea-pot constantly charged and steaming upon the stove.

Any agreeable antiseptic drug may be used in this vaporizer, by placing it upon the sponge. In whooping cough, a few grains of menthol may be sprinkled upon the sponge and the child allowed to breath its vapor freely. It keeps the throat cool and reduces the paroxysms of cough to the minimum.

This little instrument will not cost over ten cents, and my word for it, you would not take ten dollars and be without it, after you become familiar with its advantages.

**Action of Yeast on Typhoid Bacilli.**—Recently Dr. Springthorpe, at a meeting of the Victoria branch of the British Medical Association, communicated a description of M. de Bavay's results of a series of observations and experiments on the saccharomyces and their relation to typhoid bacilli. These saccharomyces were obtained from chyle which had escaped from the thoracic duct through an ulceration, and which appeared to possess very strong antiseptic and deodorising properties. After determining that the typhoid bacillus grew best in broth, and that milk was not a specially good medium unless it could be previously peptonised by other materials, M. de Bavay carried on a series of experiments to prove that yeast had the power of interfering with the growth of the typhoid bacillus when the two were cultivated in vitro. He found that the typhoid bacillus growing in an alkaline

medium was much more virulent than that organism growing in an acid medium. He explains this on the assumption that the poison secreted by the organism is immediately precipitated in the alkaline medium, leaving the bacillus free to act, whilst in the case of the acid medium the poison is not precipitated, and eventually accumulates to such a degree that the organism which secretes it is itself poisoned. He found also that if he retained the sediment from an alkaline solution on a filter, and then dissolved it in a weak acid, he obtained an exceedingly toxic substance. From this he argues that as yeast is able to pass through the intestine comparatively unchanged, and as it develops a considerable quantity of acid in its growth, it should, if introduced into the intestinal canal, maintain a certain acidity in the contents, and so prevent the precipitation and storing up of the typhoid poison, a storing up which takes place when the secretion is allowed to remain alkaline. He also holds that if the food taken by the patient be saturated with yeast which is a harmless organism the typhoid bacillus can no longer develop in it, and is therefore very soon starved out, and he maintains that in consequence of this slow absorption of the acid into the system a kind of self-protective inoculation takes place; in fact, after injecting a mixture of yeast and typhoid bacilli, guinea-pigs which had shown slight signs of intoxication but had recovered were proof against large doses of the poison. His conclusions are (1) that the action of yeast in the treatment of typhoid fever is principally due to the power which it has of secreting an acid, and of doing this over and over again, by which means it is able to render acid the contents of the intestines; (2) that when such an acid reaction exists, the poison secreted by the germ reacts upon the germs themselves and stops their growth; (3) that the action of yeast on the poison of typhoid differs according to whether it is pure or contaminated by bacteria; (4) that liquids impregnated with yeast are in a great measure protected against the depredations of typhoid bacilli, especially if such a liquid contains a fermentable sugar; (5) that these properties of yeast are not confined to one variety, but that they increase or diminish according to the power of assimilation and acid secretions of different varieties. Further, he has found that the typhoid bacilli, after repeated growth in peptonised broth, produce less poison, as it is necessary to use larger doses to produce the same effect.—Supplement to *British Medical Journal*.

**A New, Safe and Sure Method to Expedite Difficult Cases of Labor.**—Dr. Playfair, F. R. C. P., Professor of Obstetrics of King's



College, London, writes in Braithwaite's Retrospect of an "entirely modern oxytocic by manual pressure applied directly to the uterus to increase the force of feeble pains," etc.

Dr. Marshall L. Brown (*Boston Medical and Surgical Journal*) says : It is something like ten years since I commenced the use of the herein described method of expediting difficult and retarded cases of labor with pelvic or breech presentation. I have made use of the same method in difficult labors with vertex presentations, since that time, when the presentation was a safe one, and, from any cases, the expulsive pains of the patient seemed inadequate for the delivery of the child. I have at times applied so much force as to be apprehensive lest some harm might come to the patient; but in every instance the patients have made speedy and perfectly satisfactory recoveries. From the experience I have had in the use of this method, I am satisfied that it is a safe, sure and satisfactory help in the delivery of difficult and retarded cases of labor, with either breech or vertex presentations.

Briefly, the method consists in applying a force synchronously with the natural labor pains, by and through the hands of the obstetrician, so spread as to embrace as large a portion of the fundus of the womb as may be possible, and applied downward and backward in the direction of the axis of the pelvis.

The following are directions which should be remembered and followed in making use of this method :

1. As to the position of the patient. It can best be made use of when the patient is crosswise on the bed, in nearly the same position as when the forceps are to be applied.

2. The hands of the obstetrician should be so spread as to embrace as large a portion of the fundus of the womb as possible.

3. The force should be applied when the pain commences, gently at first, gradually increasing it to the end of the pain and should cease with the pain.

4. The force must be applied downward and backward in the direction of the axis of the pelvis.

Finally, certain precautions should be borne in mind in the use of this method :

1. It should not be used unless the presentation is a safe one or deliverable one.

2. It should not be applied spasmodically by jerks, but with a gentle, gradually increasing pressure.

3. It should not be used unless the os uteri is dilated or dilatable.

Following the above directions, and bearing in mind the cautions

given, this method will, I am sure, be found of great value in difficult and retarded cases of labor, and for the average general practitioner, safer than the forceps—*New York Medical Times*.

**Blackening of Teeth by Antipyrin.**—According to the Southern Dental Journal it is asserted that the internal use of antipyrin blackens the teeth; this peculiarity should be generally known by the profession, and also among the laity, that objections may be made on this ground to taking it as a remedy. The blackening is the more intense, the more imperfect the enamel, but may be removed by attrition with dilute acid. The considerable use of antipyrin for several years back gives importance to this latter observation.

**Suppression of the Thesis in France.**—The question of doing away with the doctorate thesis in the French medical schools is being warmly discussed by the journals. The grounds upon which the change is advocated are that the printing of a long thesis is expensive, and is often a serious tax on the limited resources of the student; that it affords no evidence of the student's knowledge, and finally, that it is usually a very poor production in a scientific, if not in a literary sense.—*Medical Record*.

**Deodorant for Iodoform.**—Eight drops of ethereal oil of coriander, thoroughly mixed with a drachm of iodoform, is said to cover the odor of the latter.

**The Treatment of Pleurisy with Effusion with Salicylate of Soda.** Dr. Oerl has, during the past five years, treated nine similar cases of pleuritic effusion with salicylate of soda, after other remedies, such as phenacetin, pilocarpine, etc., had failed, and with the exception of two instances the results were favorable. In these two the resorption was only partial. The author concludes: 1. Serious pleuritic exudations of long standing may be removed by the administration of the salicylate of soda. 2. The salicylate has in exudative pleuritis, just as in polyarthrititis, an apparently specific effect. 3. The fact that, so far as experience with this remedy has gone, no new collection of fluid is observed, makes surgical interference in serous pleuritic exudation not only not imperative, but, indeed, puts operative procedures in the background.—*Medizinal Zeitung*.

**Treatment of Erysipelas after Niehaus' Method.**—Schneider (Centralblatt für Chirurgie, April 16, 1892), writing on the treatment



- of erysipelas, refers to that recommended by Niehaus. A part of the affected area, about two hand's breadth away from the disease, is printed with collodion, the contraction of which gives the same sensation as if it were lightly surrounded by a bandage. It was very interesting to watch the inflammation extend to this contracted part and there stop. At the edge of the collodion the particles of skin formed a sort of wall. If the collodion is not used freely enough the result is not always so good. He thinks the plain collodion quite as good as ten per cent. ichthyol collodion. In most cases the inflammation disappears in the course of two or three days.—*Universal Medical Magazine*.

**How long Should a Convalescent from Diphtheria be Isolated ?**

—Prince (*Boston Medical and Surgical Journal*, 1891, cxxv., 691) writes of a case; the patient was supposed to be well, and made a visit to a relative in Boston nine days from the date of his "getting up." One week after his arrival a child in the family was attacked with diphtheria and died. An outbreak of diphtheria in a hotel at Nantucket followed the arrival of a person just recovered from diphtheria and pronounced well by the attending physician. One of these cases, when supposed to be well, carried it to a hotel in town. Three cases of diphtheria in one family, closely followed the advent of a nurse who had just come from attendance on a fatal case.

I think that evidence goes to show that poison is retained in the mucous membrane longer than is generally considered to be the case. In lieu of definite knowledge, I have adopted the arbitrary rule of advising quarantine precautions for one week after the patient appears to be perfectly free from disease. This seems to be a fairly safe rule and one that is desirable—*Medical and Surgical Reporter*.

---

## REVIEWS AND BOOK NOTICES.

---

**INTERNATIONAL CLINICS.** A quarterly collection of clinical lectures on Medicine, Neurology, Pediatrics, Surgery, Genito-Urinary, Surgery and Venereal Diseases, Gynaecology and Obstetrics, Ophthalmology, Laryngology and Rhinology, Otology and Dermatology. By Professors and lecturers in the leading medical colleges of the United States, Great Britain and Canada. Edited by

John M. Keating, M. D., Colorado Springs, Col., and Judson Daland, M. D., Philadelphia, and J. Mitchell Bruce, M. D., F. R. C. P., London, England, David W. Finlay, M. D., F. R. C. P., Aberdeen, Scotland. Illustrated. Price per volume: cloth, \$2.75; half leather, \$3.00. J. B. Lippincott Company, Publishers, 715-717 Market street, Philadelphia.

The excellent reputation of this publication is being well maintained. The July volume for 1891, is, if possible, an improvement upon the first.

Volume I of the second series is an improvement upon either one of the others, in that the subjects are arranged with greater care and the different lectures treated in a more exhaustive manner.

The index is so clear and complete, one has little trouble in finding that which he is in search of.

Surely the publishers are to be congratulated upon the very excellent work they are doing, and the profession should feel grateful to them.

#### PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets received :

Typhoid Fever in Chicago. By William C. Sedwick.

Pathological Conditions of Nose and Throat as Causal Factors in Asthma, With a Report of Successful Cures of Asthma. By Louis E. Blair, M. D., Albany, N. Y.

The Treatment of Tuberculosis of Bones and Joints by Parenchymatous and Intra-Articular Injections. By Nicholas Senn, M. D., Ph. D. Chicago, Ill.

Traitement de L'Hypertrophie des Amygdales. Octave Doin, Paris, F. Letters to the Florida Medical Association, in Session at Pensacola, Fla. By R. B. S. Hargis, M. D.

Transactions of the American Dermatological Association at its Fifteenth Annual Meeting held at the Shoreham Hotel, Washington, D. C.

Camphor-Menthol in Catarrhal Diseases. By Seth Scott Bishop, P. D. On the Sterilization of Milk at Low Temperature. By Rowland Godfrey Freeman, M. D., New York, N. Y.

Results in Cases of Hip-Joint Diseases treated by the Portable Tractionsplint. By Lewis A. Sayre, M. D.



# THE Albany Medical Annals

---

VOL. XIII.

SEPTEMBER, 1892.

No. 9.

---

## Discussion on the Treatment of Gall-Stones.\*

INDICATIONS FOR TREATMENT, BY S. R. MORROW, M. D.

It sometimes happens that two or three hours after eating, or perhaps after an outbreak of angry feeling, or the receipt of some depressing intelligence, an individual, one apt to be of full habit, inclining to obesity, rather given to the pleasures of the table, somewhat sedentary in his way of life, is suddenly seized with pain of a most atrocious character, at the margin of the liver, and in the right side of the epigastric region, the pain radiating widely from this locality. He screams in agony, writhes and groans and tosses himself about his room or on his bed. He breaks out into a drenching cold sweat, and may be shaken with a chill. He may even fall in an epileptiform fit or become unconscious. Intense nausea accompanies the pain, he vomits violently, but gets no relief. His pulse fails, he is pallid and on the verge of collapse. Such paroxysms may last from a few hours, varying in intensity, up to several days or even weeks. Jaundice usually sets in after the pain, and constipation with putty-colored stools.

These distressing phenomena may subside gradually or may disappear as suddenly as they arose, and the storm of suffering be at once succeeded by an enchanting sense of rest and peace. Such a scene is presented often enough in the experience of every practitioner and with such a sequence of symptoms the explanation of the case can hardly fail to suggest itself—gall-stone colic.

---

\* Read before the Medical Society of the County of Albany, Dec. 16th, 1891.

What relief can we afford the victim of such intolerable distress? In what direction shall we look for help? For not only must we give as prompt relief as possible, but we must so manage our patient as to prevent a repetition of this experience, which unfortunately is very likely to occur again and many times, since hepatic calculi are rarely solitary.

The indications for the treatment of gall-stones relate to their *cause*, to their *nature* and to their *effects*. The origin of these bodies depends on certain conditions in the bile, and in the gall-bladder and bile-ducts. The principal constituent of gall-stones is cholesterine, an excrementitious substance excreted by the liver and representing the waste of nerve and fatty tissue. Conditions of the system in which the breaking up of fatty elements occur more freely—as obesity, advancing life, sedentary occupation—are accompanied by an increased production and excretion of cholesterine. So long as the normal neutral or alkaline state of the bile is maintained, the cholesterine will be held in solution, even though its proportions be in excess of the normal. The circumstance that chiefly renders the bile acid and so allows the precipitation of cholesterine, is a catarrhal state of the bile-ducts and gall-bladder. The mucus formed in excess in this condition and the cast-off epithelium, act as ferments upon the bile, setting up the acid fermentation. The lime that forms such an important constituent of gall-stones is furnished chiefly by the diseased mucous membrane. Besides these chemical conditions, other physical conditions are not less important, as accumulation of bile in the gall-bladder and its concentration; an important indication in the prophylaxis of gall-stones is thus furnished by this catarrhal condition of the biliary passages. The diet must be carefully regulated, daily exercise insisted on, all irregularities of life corrected, and such medicinal treatment instituted as will remove these conditions that favor the formation of gall-stones.

*Age and sex* furnish other indications, since advancing life and the more or less imperfect assimilation connected with the decline of health and vigor are influential factors in the pro-



duction of gall-stones. Women are more liable than men to this disease, as they lead more sedentary lives, suffer more from digestive derangements, use a less suitable diet, compress their viscera by stays, and are the subject of peculiar and often depressing influences at the menopause.

Position in society also suggests certain lines of treatment, since this complaint is more common among the luxurious and plethoric diners-out than among the abstemious and under-fed.

Malarial influences also point out special lines of treatment, for attacks of hepatic colic are particularly frequent in the malarial regions of the west and south. So, warm climates tax the functions of the liver to compensate for the increased action of the skin and lungs, and if besides warmth the malarial poison prevails, the liver becomes specially affected by it, and the congestion of the liver which the poison causes, induces the catarrhal state of the biliary passage, which is so potent in producing these concretions.

Errors and indiscretions in diet, such as over-indulgence in fatty foods as well as in starchy and saccharine materials, favor the formation of gall-stones by the catarrh of the mucous membrane they cause or keep up. Here again a hint as to treatment is indicated.

Obstacles to the outflow of bile have the same effect, by causing stasis and concentration of the bile. Such obstructions have been succeeded by cancer of the gall-bladder or of adjoining viscera pressing upon the cystic duct. Perhaps advancing knowledge will enable us to guard against this source of obstruction.

Insufficient air and exercise, by lessening oxidation, act in the same direction, and here we have to do much for our patients in overcoming their indifference or indolence, or gluttony or intemperance. Some cases seem to point to moral causes, as fear, anxiety, anger, chagrin—and here the higher arts of the true physician and the noble man are to be called in.

When we come to the indications from the effects of gall-stones we reach different ground. It often happens that

gall-stones form and accumulate to a large extent without causing any discomfort or interference with perfect health—often being found on autopsy when no sign of their presence was manifested in life. The gall-bladder is endowed with little sensitiveness and the mere presence in it of concretions may cause no uneasiness. Further, the function of the gall-bladder is only to store up bile, and it may be so filled with stones that no bile can enter it, yet if the common duct be not blocked up, the functions of the biliary secretion may be discharged, and the slowness with which gall-stones form enables the bladder to accommodate itself to the new condition as well as ever. Even the escape of these bodies by the natural channel and by ulceration into the duodenum, may go on without any local or general disturbance, especially in those individuals who are slow to appreciate or respond to the various kinds of excitement.

But this delightful state of things is unfortunately not always present. The calculi are often moved along the ducts by the flow of bile, and this is most marked a few hours after eating, when the presence of chyme in the duodenum stimulates the gall-bladder to contraction. If a stone be arrested in the cystic duct, or more especially at the outlet of the common duct, the well-known symptoms of gall-stone colic are initiated. The train of symptoms need not be repeated or enlarged upon—the great, prominent factor in the case is the pain, horrible, excruciating, often the severest that one is called upon to suffer. It *must* be relieved. It so often results in great prostration of the vital powers, slowing and even arresting the heart's action, that we must obviate this tendency with all promptness. Very serious nervous disturbances may accompany the pain—hysterical convulsions, epileptic seizures, herpes zoster of a severe type are among them. A febrile state may accompany the colic and need special treatment. The nausea and vomiting, which are always present, must be allayed, if possible, but unfortunately they do not often disappear until the calculus has escaped. Constipation is the rule, with clay-colored fetid stools and marked tym-



panites, and here great care is needed in overcoming the condition.

The dangers and discomfort of this complaint are not ended by the passage of the gall-stones through the natural channels, however painfully accomplished. If some escape, others probably will remain behind. Hundreds may be found in the stools, but when hundreds and even thousands remain — one case having been observed where 7,802 stones were counted — the capacities for mischief are indefinite. Although gall-stones sometimes remain in the gall-bladder through life without causing trouble, yet they often ulcerate through in different directions. They become impacted at various points, one of the commonest and most dangerous being the duodenal end of the common duct. If ulceration takes place, we have a new set of dangers in the liability of peritonitis setting in, when the stone and bile escape into the peritoneal cavity. The irritation of the stone may cause inflammatory exudations and adhesions at the seat of impaction and a protecting envelope be thus thrown about it, from which fistulous tracts may form leading to the external surface or to some neighboring organ, thus permitting safe discharge in this direction. But the organ invaded may not tamely submit to its visitation, and when the lung, or vena cava or kidney are opened into as they have been, the serious possibilities of these cases become apparent. It is here that surgery steps in to remedy these most unpleasant conditions, but especially to prevent their occurrence by a safe and prompt evacuation of these troublesome companions through a short and speedy route to the open air.

#### SURGICAL TREATMENT BY A. VANDER VEER, M. D.

In entering upon the discussion of the surgical treatment of gall-stones, I wish to state most distinctly that I am thoroughly in favor of a careful, clear and intelligent carrying out of medical treatment before operative interference. I have great confidence in very much that can be done by the use of medicines and employment of proper diet in the treat-

ment of concretions within the gall-bladder and ducts. In cases of repeated attacks of biliary colic, with or without jaundice being present, and we often find well-marked cases of colic resulting from the passing of thickened bile or gall-stones through the common duct, that do not present a condition of jaundice sufficiently well defined to attract attention, yet the danger in these cases is equally as great. I may emphasize that the dangers of an attack of biliary colic are not always fully understood. The patient who has once passed through such a condition has much to fear from repeated attacks. There is great danger of perforation and peritonitis resulting. There is danger if, by localized peritonitis and a process of ulceration and adhesions, nature finally lands a good-sized gall-stone into the intestinal tract. There is danger of this causing obstruction somewhere in the small intestines.

These calculi not unfrequently become a nucleus for the formation of an enterolith and cause obstruction in that way. The patient is always in great danger of dying from syncope or heart failure during the time of the attack. Then, again, when a great number of small calculi pass into the intestinal tract, directly through the natural channel of the gall duct, there is danger of these lodging in the appendix and becoming one of the many causes that lead to appendicitis. Then, again, the cholaemia that results from prolonged attacks of jaundice, as a consequence of stenosis of the common duct, from gall-stones, is not always fully appreciated. The patient is often left in that condition until his blood is so broken up, and when ecchymotic spots are prominent, that the exhaustion now present, as a result of the circulation of the bile acids, makes surgical treatment entirely out of the question. These are some of the many dangers to which a patient is subjected who suffers from gall-stones. As to direct surgical treatment, there can be no question that the patient who has suffered from repeated attacks of biliary colic, and has given his case a good, fair trial in the way of medicinal remedies, ought not to hesitate or be kept from



having a cholecystotomy done. This operation is now performed with the greatest success, and reflects additional credit upon abdominal surgeons in being able to carry their art still further in the relief of cases that, in the near past, were considered almost hopeless.

The operation of cholecystotomy in itself is not a difficult one, provided the gall-bladder is partially distended. See case. When, from repeated inflammatory attacks, the gall-bladder has become surrounded with adhesions, and contracted, or, where the stone is large, as is here represented in this specimen I show you, then it becomes a more difficult and dangerous procedure. The surgical treatment of gall-stones becomes always somewhat embarrassing, and not by any means an easy operation, when the calculus is lodged in the hepatic cystic or common ducts. These cases can be reached only in the following manner:

Dislocation of the calculus en-masse, either into the duodenum or into the gall-bladder.

Chole-lithotripsy, either by crushing through the walls of the duct with padded forceps or fingers, or, from within the gall-bladder by means of the needle or fine probe, followed by removal by the way of the gall-bladder or intestinal canal.

Breaking of the calculus by the introduction of strong needles through the walls of the ducts and subsequent dislodging of them.

Cholecystenterostomy, according to V. Winiwarter, or modifications of it, as has been suggested by Gaston, of Atlanta, in his elaborate experiments upon dogs.

Incision of the gall ducts and removal of the calculi, with subsequent suturing of the incision in the duct.

Dissolving the gall-stone after the gall-bladder has been opened is not yet an assured success.

When the adhesions are strong, and present somewhat numerous, we must not be discouraged in going on with the operation. Though there may be but the mere remnant of a gall-bladder, we must, as it were, sink a well down between the adhesions, avoiding the large vessels deep in the abdomi-

nal cavity, and by use of a glass drainage tube, iodoform gauze packed around the tube, or by making use of portions of loose omentum we can frequently succeed in shutting off the discharge of bile from entering into the more healthy peritoneal cavity.

Abdominal surgeons no longer dread peritonitis as they once did. With cleanliness, with proper care of instruments and sponges, peritonitis seldom follows an operation now.

Therefore, I may say that in the future we are likely to do a greater number of operations for the relief of our cases of gall-stones than we have done in the past.

There are sometimes obscure cases in which exploratory incision alone will clear up the diagnosis, and which can be made with safety as far as our patient's life is concerned.

#### MEDICINAL TREATMENT, BY S. B. WARD, M. D.

The objects of the medicinal treatment of gall-stones may be three-fold: First, the relief of the spasm which accompanies the passage of the stone through the gall-duct; second, the solution of the stone *in situ* in the gall-bladder; and third, the prevention of the recurrence of this condition.

First, for the relief of the spasm: It is probably almost universally admitted that for the relief of spasm, the hypodermic use of morphine and atropine gives more immediate, entire and permanent relief than any other single remedy. It is safe to administer not more than one-quarter to one-third of a grain of morphine and not more than one one hundred and fiftieth, to one one hundred and twentieth of a grain of atrophine at the first dose, and repeat this every hour until relief is obtained. Larger doses, even up to one grain of morphine, has been given, but annoying and even dangerous results in some instances have followed. Antipyrine and acetanilide have also been recommended for the relief of the spasm and pain. Hypodermics of chloroform in doses of half a drachm to a drachm are said to act more promptly than morphine, and, if given at the same time, will afford relief until the morphine begins to act. Ether and chloroform may also



be administered by inhalation, but the effect passes off very rapidly, as the narcosis is recovered from. Hot fomentations repeatedly applied over the region of the liver, and better yet, a full hot bath continued for some time, also give very great relief. Brichiteau states that where hot applications fail to give relief, he has found the application of ice to the abdomen to be quickly followed by a relaxation of the spasm. For the retching which frequently follows the expulsion of the contents of the stomach, the injection of considerable quantities of hot water has been found to be of great benefit.

Recently the attention of the profession has been pointedly called to the revival of the use of a very old remedy for the relief of the spasm and the expulsion of the stone, namely, the administration of olive oil. Normal bile is thin and either neutral or alkaline in its reaction. Thickening of the bile and acid reaction, appear to favor the formation of stone. Any cholagogue therefor, which increases the quantity of bile secreted, at the same time reducing its consistency, might be supposed to favor the expulsion of the stone. Virchow's theory for the action of olive oil is, that when given in moderate doses of two to four drachms, it is absorbed from the alimentary canal, is secreted by the liver, and is thrown into the bowels again through the biliary passages. If this theory is correct, the olive oil is a true cholagogue and besides, lubricates the duct so as to facilitate the passage of the stone. Dr. David D. Stewart of Jefferson Medical College, explains the action of the oil as follows: "The pancreatic juice by means of the fat-splitting ferment, steapsin, decomposes the oil in the duodenum into fatty acids and glycerine. The glycerine acts on the duodenum in the same way in which it affects the rectum when used by enema, withdrawing water, and causing hyperaemia and irritation of the afferent nerves of the part with which it comes in contact, thus leading to powerful reflex peristalsis. This irritation would also cause reflex contraction of the gall-bladder, cystic and common bile-ducts, thus promoting the expulsion of stones sufficiently small. The diffusibility of glycerine, would also enable it to

enter the gall-bladder and the ducts leading therefrom, and produce similar depletion of the vessels, locally, and reflexly promote contraction of muscular fibres. A copious out-flow of diluted bile would also promote the dislodgment of stones. No satisfactory explanation has heretofore been offered as to the efficiency of the oil; and as it seems probable that glycerine can produce the effect now under consideration it is likely that it is caused by it. If this can be proven, yet the oil would have to be given, as the hygroscopic properties of glycerine would cause its dilution if given by the mouth, so that it would be too weak by the time it reached the duodenum.

To prevent the nausea and difficulty in retaining the oil, he uses, half an hour before-hand, the following:

R

Cocaine, 1-3 grain.

Comp. Tr. Cardamon.

Spts. Chloroform aa 10 minims.

(*Medical News*, April 11th, 1891, page 423.)

Dr. David Y. Winston of Russelville, Kentucky (*Medical Record*, Nov. 28th, '91.), has investigated this subject quite extensively and finds that when the oil is taken in doses varying from a pint to a quart in 24 hours, globular greenish, dark bodies, resembling gall-stones, are expelled from the rectum. An examination of these shows them to be of a fatty nature and of varying degrees of hardness, and to consist mainly of the fatty acids and hard fats. That they are oil is shown by the fact that they melt when exposed to an elevation of temperature, that they burn like oil and that they are soluble in ether. He has found no true gall-stones passed as the result of the administration of the oil. Villemin (*Medical News*, Oct. 17th, 1891), states as the result of his observation on this point, that olive oil will not dissolve biliary calculi; that it is a chologogue; that it may also cause some reflex action, and concludes that it does arrest the pain of biliary colic, shortens the attack, and prevents subsequent weakness and jaundice. Dr. J. Touatre of New Orleans (*New York Medical Journal*,



January 14th, 1888), reports having cured himself and several others by six ounce doses of olive oil, following a few hours after the administration of a blue pill. Dr. S. Rosenberg has proved by experiments on animals, that olive oil is a true cholagogue.

The administration of emetics for the relief of the spasm was popular at one time, but has latterly been almost entirely abandoned on account of the prostration that followed their use; but the giving of potassium tart. of antimony up to the point of producing slight nausea, appears to be of some assistance in relaxing the spasm.

The most complete and satisfactory article that I have seen on the use of olive oil is contained in the *N. Y. Medical Journal* for October 1891, page 386. The Therapeutic section of the Philadelphia Polyclinic Medical Society makes a most exhaustive report of fifty-four cases of the use of the oil, in tabulated form. The result of their investigation is, that in ninety-eight per cent of these cases, positive relief was afforded. Dr. Rosenberg showed, two years ago, that olive oil beyond a doubt largely increases the bile secreted, while, at the same time, it diminishes its consistency. They conclude also, that it appears from the consideration of other cases, that the oil need not be administered in very large doses, as recommended by some writers, but that deserts-ful doses every three or four hours afforded apparently the same prompt and positive relief as that which was afforded by doses of from 5 ounces to one or two pints. Furthermore, it appears that cotton seed oil answers every purpose just as well as olive oil. Indeed it is a well-known fact that much of the oil which is sold as olive is in reality refined cotton seed oil, and Dr. Stewart's observations tend to show that in all probability any bland oil would have the same effect on the disease under consideration.

As to the possibility of dissolving gall-stones in the gall-bladder, it is scarcely necessary to go into all the theories and contradictory statements that may be found in the older journals and text books on this subject. It is almost universally

conceded now that no drug can be administered by the stomach with this result any more than a urinary calculus can be dissolved in the bladder by similar means.

As to the prevention of the recurrence of attacks of biliary colic, there is equally little doubt in the minds of the profession at large that much may be accomplished. For many years Durande's remedy had a very wide-spread popularity. It consisted of three parts of sulphuric ether with two parts of oil of turpentine, to be taken in drachm doses until sixteen ounces in all had been consumed. The result of long use, however, on the part of Frerichs and many others, has shown this remedy to be almost entirely worthless. It has been clearly shown that the ingestion of fats and sugars, a sedentary life and exposure to malarial influences are potent factors in the production of gall-stones; therefore, all these should be sedulously and studiously avoided. Many years ago Hoffman recommended the use of alkalies for the purpose of promoting the secretion of bile and keeping it in such condition as to make the deposit of a calculus impossible. The administration of the salts of soda appears to have given the best results, and of these salts the bi-carbonate stands at the head of the list. The other salts that have been particularly recommended are the sulphate, phosphate and salicylate. Many practitioners prefer the administration of alkalies in the shape of natural mineral waters, and the springs most highly recommended are those of Carlsbad, Vichy, Ems, Marienbad and Kissengen. Many of these spring waters appear to be most efficacious if taken hot before breakfast. Of the other drugs that have been recommended we may mention the extracts of taraxacum, gramen, chelidonium, carduum benedictum, gum amoniac, asafoetida, a pill of belladonna and podophyllin, each one-quarter of a grain, wild yam (*dioscorea villosa*), and the decoction of asplenium ceterach.

The grape cure, which has many adherants on the continent of Europe, probably owes its efficacy to the salts contained in the juice of that fruit.

As long ago as 1821 Dr. Hall, of Philadelphia, stated that



he had cured cases of gall-stone by the use of electricity. Of late years, however, we do not find that this treatment has any adherants.

In conclusion, we may sum up by saying that the most instantaneous relief of biliary colic may be obtained by the administration of chloroform or ether, by inhalation or hypodermic injection of the former drug. That the more permanent relief of the spasm and pain may be obtained by hypodermic injection of morphine and atropine, or the administration of olive oil; and that to prevent the recurrence of such attacks the administration of the mineral waters or of the salts of soda still holds the first rank.

#### GENERAL DISCUSSION BY MEMBERS.

DR. SEYMOUR: I occupy rather the unique position of having been a sufferer from this disease and having been relieved of it. There are some things in the discussion I would like to call attention to. It has been a particularly interesting one to me, and one to which I could add but very little; but Dr. Morrow spoke of malaria poisoning giving rise to gall-stone. I think malarial poison is a very common occasion for it, but in this connection I would like to call attention to one other condition; that is, a true hepatic intermittent fever, due to suppurative inflammation of the gall-channels. In regard to the pain, I think the greatest pain occurs in the case where the stones are passing through the cystic duct, and consequently, in cases where there is little or no jaundice, the jaundice cases being with those where the obstruction is in the common duct, or its orifice in the duodenum. In regard to the stools, it is quite important to bear in mind that all cases of complete obstruction of the common duct do not necessarily have colored stools, but from the fact of there being so much bile in the general circulation, the intestines are stained, and the stools are as if they were gilded. Some years ago my father had a good lesson in this point from Dr. Brendmade, of Troy, one of the keenest practitioners of the State. The complaint had every evidence of obstructive jaundice. Dr. Brendmade, I think, was the attending physi-

cian, and my father was called in consultation; and when they observed the stools, my father remarked there was a good bilious stool, and Dr. Brensmade called for a stick and broke up the stool; it had a thoroughly good bilious coating, but it had been stained by the intestine, and that, I think, is quite an important thing to bear in mind. With regard to the pain in the attacks of bilious colic, I have had several hundred of such attacks, and I have watched the increase of the attack from its earliest beginning down to such a point that I was compelled to seek relief and obtain relief in morphine, or atrophine, and it was in my case inevitably in the epigastrium. So far as my observation of a great many cases has gone, it is almost always there, in the epigastrium, and if a careful examination is made at that time, and with an intelligent patient, the greatest tenderness will be found not in the the epigastrium, but in the liver border, and especially over gall-bladder. I have watched it in my own case by the hour, palpating my abdomen until I ceased to have a very active interest in that, and sought relief in morphine. Then, again, with regard to the indications for operation. I would go a little farther than Dr. Vander Veer does in regard to it. I should operate in all cases of gall-stones, if the attacks were repeated, and with increasing frequency, even though the attacks were not so very severe, because from my own experience with my own and other cases, I know it does not depend upon the size of the stone, and no matter how severe the symptoms or the dangers of the case may be, we cannot tell how soon a patient may die in an attack. I have seen patients die from an attack where the stone was not much larger than a marrowfat pea; and again, I recently had a case where that was particularly instructive as showing how they may die. I was asked to operate on a case of so-called obstruction of the bowels. I found the patient had a mass in the groin. Six months before, during what I presumed to have been a gall-stone attack, the mass had come down, and it returned after a little. Six weeks before, in an attack of severe pain and vomiting, it had come down and had never been replaced.



Three days before I saw the patient, in consultation, she had been taken with a severe attack of vomiting and pain; it had not abated in any degree; in fact, the vomiting had become very suspicious that morning. I operated, and found a strangulated incarcerated femoral hernia, as I had diagnosed; a small portion of the intestine had been forced into the hernial opening and had become strangulated. The patient died several days later; my diagnosis was, that the primary attacks in each of these instances were gall-stones. The autopsy disclosed a large gall-stone the size of a pigeons egg occupying the gall-bladder, and this had undoubtedly caused these attacks of vomiting and pain, and the straining had forced down the hernia. I know of one other case where an operation was performed by an eminent New York surgeon for ovarian tumor. The patient did nicely for a time, and then was taken with the most atrocious pain. The autopsy disclosed the ovarian operation had been practically a success, but there had been a perforation of the gall-bladder, and gall-stones were found in the belly. It is two years since the 13th. of November since Mr. Tait operated upon me. Before that it was a question with me whether life was worth living or not, and the answer was decidedly, it was not, if I had to stand the pain and torture I was daily and hourly subjected to. I could not ride over an easy road without the most atrocious pain, and I decided on an operation. They removed a number of very small stones and three quite large ones, as large as hickory nuts; since that time I have not had a single twinge of pain. I am not aware that I have been dissipated, or a glutton, or anything of that sort, but I have had and did have for three successive years attacks of intermittent fever; this malarial poisoning may have had something to do with it, but I am inclined to think a large number of gall-stones are formed in early youth, and I think the operation is, in that respect, curative.

Dr. COOK: Mr. President: I was quite interested in the list of remedies spoken of by Dr. Ward in his paper. I have treated quite a number of cases of gall-stone colic, some

of them so well marked it would be impossible not to know they were gall-stone, and am in the habit of using nitro muriatic acid dil, with calasayic and taraxicum. Really, I am not prepared to say I believe it dissolves the stones, but I think it prevents the formation of new ones by keeping the bile in proper condition. I remember one case that came under my care, where the Favorite Oil treatment had been followed. It was a case that had been under the care of an old physician that lived on this side, and the patient living on my side, I was called in several times in an emergency. One time I remember very well, having my hyperdermic ready, and all at once the pain ceased, and I had no occasion to use it. That case ultimately came under my care; I don't know whether the diagnosis, before I saw it the first time, was gall-stone or not, but the patient had been treated a year or longer. I told the woman she had gall-stone colic, and after that her physician saw her and put her on the sweet oil treatment. I have forgotton how long she was under that treatment, but when she came to me I placed her under the treatment I have spoken of, and continued the case for nearly a year. After I had ceased giving her the nitro muriatic acid dil, elix. calisaya aud extract of taraxicum, I then gave muriate of ammonia, quite fair doses for some time, that case now has been free from colic for the space of nearly four years. That is one experience. I have treated a number of cases and have followed out this line of treatment, and I am not aware of anyone dying. I do remember one case twelve years ago that did die, that was under my care. The autopsy was held by Dr. Vander Veer, if I remember right, where we found quite a large concretion in the gall-bladder, practically occupying the whole gall-bladder. The gall-bladder being somewhat smaller than usual. Whether at that time I used this form of treatment or not I don't remember; but it seems to me where the case is not so urgent as to call for surgical treatment (general practitioners do not turn them over to surgeons as long as they think they can get along without it), a line of treatment of this kind is really of service.



DR. CURTIS: I would like simply to ask a question of one of the gentlemen, whose experience is large, what the symptoms are that accompany a case which sometimes is met with, of an occupancy of the gall bladder by one, single stone. I remember seeing cases of that sort in post-mortems, but I do not remember of seeing cases in life. Dr. Seymour refers casually in his remarks to the instances of it, and the symptoms attending it. I would like to know what symptoms are to be found that are diagnostic of that condition.

DR. SEYMOUR: Mr. President; I do not know of any line of symptoms that would enable one to differentiate between a solitary gall stone and multiple gall stone. It was on that which I largely based my determination to undergo the operation. The fact that in my own case I would have the pain brought on by any jar, a railroad jar, or any slight shaking, and the pain would go on until it would amount to a perfectly atrocious gall stone paroxysm, I inferred to be due to the presence in the gall bladder of a stone so large that it was dislodged by the agitation of the buggy or car, and dropped into the neck of the duct, into which it was too large to enter, and as soon as I took morphine to allay the paroxysm, or to stop it got into a hot bath and rested, or kept quiet, it passed by. In the case of the large solitary gall stone to which I referred leading to the strangulated hernia, the attack was that of any ordinary gall stone paroxysm. I know they may produce no pain at all if the gall bladder is well slung up by adhesions, attachments to the liver. I do not know whether my experience is worth anything, but so far as this one thing is concerned, before I was operated upon, and while subject to gall stones, I never could sleep on my left side. If I turned on my left side an instant, no matter in how deep a sleep I was, I was awakened by the drag in the region of my liver. Now I think I could sleep on my head. I certainly can sleep on my left side. I am inclined to think the difficulty in sleeping was due to the drag upon the liver, the weight of the liver pressing down upon the gall bladder which was filled with these stones. I do not think otherwise than as I say, you can make

a differential diagnosis between a solitary stone and multiple stones.

DR. COOK: I think most of the members of the society remember the late Dr. Sabins' remarks on gall stone colic, when he stated that bicarbonate of soda was the remedy for gall stone and gave his own experience, and was enthusiastic about it, and most of us are familiar with the fact of what occurred at his death. The subject coming up to-night reminds me very forcibly of it, and shows that physicians are liable to be mistaken themselves in regard to the remedies on themselves. I do not speak of that in relation to Dr. Seymour, because his case as reported was surgical.

DR. SEYMOUR: Dr. Sabin told me he was cured; he had been I think eight or nine years without a paroxysm, and I laughed at him. He had perforation of the gall bladder, and when he died 152 gall stones were found in the gall bladder.

DR. BALL: Mr. President; Dr. Seymour says in his case there was a constant dragging if he turned over to the left side. In three cases of post-mortem that I have assisted in, I found the gall bladder completely filled with these stones, but the history of those patients previous to death never gave any traces of them whatever, so that I think Dr. Seymour is correct in his saying that adhesions attaching the liver and gall bladder holds them up in place and caused comparatively no disturbance. At least there was none in those three cases.

DR. PAINE: Mr. President; I would like to ask Dr. Vander Veer in operating for the removal of stones, what sutures he uses or what means he adopts of closing it after the operation.

DR. VANDER VEER: Mr. President; In regard to medicinal treatment, I think you all remember one or two sentences of my paper on surgical treatment, emphasizing somewhat the good effect of the medicinal treatment, and I still have the impression of good results. I have been in the habit of making use of the olive oil for several years, and yet not in large doses until the past three years. Whether it is a mere coincidence or not, I have two specimens here that bear



directly upon the subject. Other specimens were collected a little irregularly. For the past two years I have been in the habit of giving the olive oil something in this way. Giving the patient a prescription for a pint, and letting him take four ounces night and morning until all is taken, then two days following it or preceding it with a dose of blue mass, or small doses of calomel, but generally following the administration of olive oil and patients have recovered, yet, at the same time, they do not all recover. Here is a case of a gentleman aged 60, banker by occupation, a good liver, weight about 220, and made his flesh in a period of four or five years after taking life a little easy. Was taken last winter with an attack of gall stone colic followed by severe jaundice; it lasted for a period of four weeks, not improving, nor getting any better. I was sent for by Dr. Cavend, of Rutland, Vt., to come up and do a cholecystotomy. I went up and was prepared to operate. He was not very strong, still, his surroundings were excellent in every way. I asked the question, "Doctor, did you try the olive oil?" He said "No," he had not tried it. I really felt it was advisable to give the olive oil a trial, and it was prescribed with the understanding I was to come up in three or four days if he was not better; he took the usual pint, and at the end of a few days I was telegraphed for to come up to operate, that the patient was not materially better. Between the time of receiving the telegram and while on my way, the man had his proper evacuation of the bowels, and among the movement was found this gall stone, it came out whole. We cracked it up in making our examination. That man went on to complete recovery, and looks as well as he ever did. I saw a lady at Schenectady who was also suffering from biliary stone, and had had three or four sharp attacks. She was a lady about 65 years of age. I saw her in consultation with her physician, Dr. Faust. I did not consider her a very good subject. She had a weak heart, and I felt it was somewhat doubtful as to the operation whether she could bear it or not. I suggested the use of the

olive oil, which had not been tried. That lady at the end of a week passed this stone.

DR. SEYMOUR: Had they searched the stools before?

DR. VANDER VEER: Yes, thoroughly. She had two excellent trained nurses, and they examined her stools with care.

Here is the gall stone the paper that represents others of about the same kind. That was passed the fifth or sixth day after a large dose of olive oil. The patient went on and improved. She ultimately died three months afterward from a condition of exhaustion. She was an old lady, yet, at the same time, I am convinced that small stones had something to do with her suffering. In what way the olive oil acted I am not prepared to say. I was very much interested in Dr. Brennan's reading of Dr. Ward's paper, as to the extracts, three attempting to give an explanation and so on, in regard to the action of olive oil. I do not pretend to understand it; I only know I believe it does some good. I would say in regard to Dr. Cook's prescription of nitromuriatic acid. I believe that it is a good prescription in some cases. Dr. Sabin used to say "I believe you can cure all your cases by the administration of bi-carbonate of soda," and six weeks afterward he was dead with 152 gall stones that were found in his bladder, he died from perforation. So that it is questionable whether any one or all remedies are going to save our patients. I simply believe that surgical treatment is important. In answer to Dr. Morrow's question as to the use of needles, I read a paper a few years ago by Mr. Harley, of London, on the examination of the gall bladder, with the view of making a complete diagnosis. And I then bought two very nice needles, but I never had the courage to use them. I got them after reading that article, and I have them still. The tapping of the gall bladder will sometimes result in the extravasation of bile. I would say in answer to Dr. Paine, the iron-dyed silk No. 6 is perhaps the best to use for the attaching of the gall bladder to the incision, and it is a very simple operation, when the gall bladder is not too much contracted. A wound will heal if there is no stone in the



common duct, the external incision will heal just as it has in Dr. Seymour's case. If there is any stenosis left this opening will continue, and you will have a fistula for some time, which can be closed afterward. Dr. Curtis brought up a point that interested me, and I am glad that he spoke of it. We have a few specimens here that I got at the time of making a post-mortem, and I rather pride myself upon having a rare specimen. Here is a specimen of pure cholesterine that I got from a patient who died somewhat suddenly, and I remember to have entered upon my notes the history of that patient, that ten years previous she had suffered from hepatic colic for some time, and yet, that single, solitary gall stone was found in the gall bladder. The gall bladder was somewhat of its normal size, not surrounded closely with the stoue. Here are two from a lady living on the Troy road, who used to have her attack of gall stone colic, but had a number of years' relief and died with these two, in the gall bladder. Here is another one with almost the same history, and I inquired of these three cases whether they had suffered in a short time from gall stone colic. I believe a stone of that size does not get into the opening of the cystic duct. It is too large, and they are relieved, and that those large stones are not likely to produce very much trouble.

---

**The Regulation of Prostitution.**—According to the Union medicale, 2,941 registered prostitutes were arrested for various offenses in Paris during the year 1891, and only 251 of them were found to be diseased; whereas, among 2,637 clandestine prostitutes arrested during the year for similar offenses, 1,155 were found to be diseased. We commend these facts to those who oppose the official regulation of prostitution.—*New York Medical Journal*.

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

---

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

---

VOL. XIII.—No. 9.      SEPTEMBER, 1892.      \$1.00 A YEAR.

---

## **The Progress of the Cholera Epidemic.**

The serious epidemic of cholera in Europe and Asia is the most important event of interest to the medical profession at the present time.

Although the secular press keeps us in touch day by day with its doings in all the infected districts, yet the subject is of sufficient interest to warrant a succinct review of its rise and spread, and the means taken to check its progress.

Bred in dirt and filth, fostered by superstition and ignorance, aided by climatic influences and the habits of the people, the cholera germ grows most luxuriently and presents its most alarming effects in those places where these conditions abound. The poison which is developed under such circumstances is rapidly carried along the great thoroughfares of travel and commerce, and unless forcibly checked, visits all countries which present conditions favorable for its reception and propagation.

India, Western Asia and South-eastern Europe contain usually all the conditions for the development and dissemination of this fatal scourge, and it is to these countries that we must look for its rise, most rapid spread and intensest virulence.

The exact starting point of an epidemic like the present is usually shrouded in obscurity, but there is little doubt that it



originated somewhere in India where the disease is endemic and where it has been unusually prevalent this spring. The first intimation that we received of an outbreak of cholera came April 23 from Calcutta. The cablegram stating that the disease had been raging in Benares for some time, and that on the day previous 180 cases had been reported.

There are three prominent routes by which cholera can escape from India. The present epidemic followed the most northern, the same one which it took it 1829 and again in 1843. It travelled slowly over the mountain passes and entered Afganistan and Turkistan and soon became epidemic in Samarcand. The Transcaspian Railroad ending in this city on the east, has been built since the last great epidemic of cholera, and has somewhat diverted it from its usual course and greatly facilitated its transmission. By means of this avenue, the disease, without much hinderance, rapidly worked its way westward; and the railroad skirting Persia and southern Siberia, and terminating at the Caspian Sea, carried and scattered the seeds of disease all along its course.

Among the Europeans and more educated natives of western Asia the scourge has not been so fatal; but among the lower classes the mortality in this epidemic is very great, and has been increased in great part by the carelessness and bigotry of common people, to whom it is well-nigh impossible to teach the principles of hygienic living, and who resist all measures enacted for their good.

At Taskand, in Turkestan, the ignorance and superstition of the masses against all sanitary measures induced a riot against the officials. A mob collected and destroyed the residence of the Russian Governor and murdered a number of officials. The military was called out, but so serious had become the disturbance, that after trying in vain to disperse the rioters with the point of the bayonet, the soldiers were ordered to fire; and it was only after killing one hundred and wounding more that the riot could be quelled.

In Astrabad, in Persia, the populace fearing that the plague was visited on them by Allah, because they had dis-

obeyed the dictates of the Koran by drinking wine, took an ingenious way of putting a stop to the habit. They raided all the wine stores and drank every drop of intoxicating fluid that could be obtained, and thus at once checked the practice.

At the railroad terminus of the Caspian Sea two great avenues were open to the spread of the cholera. By the northern it was carried up to Astrakhan at the mouth of the Volga. Here it destroyed so many of the inhabitants that the government was obliged to found an orphanage for the children whose parents were destroyed by the plague. Thence it was carried up the navigable Volga to Nijni-Novgorod, where the great yearly fair is held, and to which multitudes come from all parts of Russia and Siberia and more distant countries. Eventually it raged so in this great distributing centre of Russia that the fair became practically closed, and the city was put in the hands of the military.

The sanitary conditions at the fair are vile, and the government recognizing the danger urged the people to drink boiled water; as they neglected to do this the officials hit upon the plan of distributing free, water boiled, and subsequently cooled and mixed with a certain proportion of red wine, in the hope of inducing the poorer classes to drink it, instead of from the polluted water supplies.

The southern route followed by the cholera on arriving on the Caspian Sea was by the way of Baku, the petroleum port on the west coast and terminus of the Transcaspian Railway. Here extraordinary efforts were made by the government to quarantine the disease; as it realized that if it once gained a foot-hold in this important city, that it would be next to impossible to prevent its further spread throughout the empire of Russia. The quarantine regulations were of the most stringent order, even providing for the entire stoppage of all trade. But their best efforts were thwarted by the ignorant superstition and resistance of the people themselves, to the sanitary and trade restrictions, and the scourge steadily increased.

From Baku it spread slowly south to the Turkish frontier, but mainly westward by the railroad to Tiflis, and thence



throughout southeastern Russia. Not long after, it entered Moscow, the great central mart of Russia, and made dreadful havoc there. While the officials were doing what they could to limit its ravages by quarantine and the removal of filth, religious enthusiasts, instead of helping the authorities, banded themselves together and marched through the streets in great processions, calling upon God to avert the progress of the plague.

From Nijni-Novgorod and Moscow, as distributing centres, the scourge made terrible inroads throughout central Russia, among a population already weakened and discouraged by a prolonged famine. It was a long time before the official reports would allow that it had entered St. Petersburg, and it certainly was held off for a considerable interval by the efficient police regulations; still, it did stealthily obtain admittance, and gaining ground caused a panic; the wealthiest part of the population fled from the city in terror, and many of the stores were closed. The lectures in the Medical Colleges have been suspended, and the students dispatched to the most affected districts to help fight the disease.

Continuing westward from Moscow, the epidemic has now spread to Poland, on the western border of Russia. In some of the cities all the mail matter from infected districts is disinfected before it is distributed.

Having invaded now all parts of Russia, the disease is beginning to show signs, in that country at least, of having run its course. From the official returns, which are probably rather under than over-estimated, the mortality rate for July was 50 per cent, and during this month the average daily number of cases reported for all Russia was 8,601, and the number of deaths per day 4,268. Or the tremendous total of over 266,000 cases, with over 132,000 deaths. On August 14th, this terrible scourge had still further increased. On that day were reported 9,177 new cases and 5,000 deaths. A week later it had begun to fall off, as on that day, August 21st, there were 6,510 new cases and 3,077 deaths. On Aug. 25th, the last report received, it has still further decreased to 5,679 new cases and 2,473 deaths.

While the epidemic was on the increase in Asia, every one was startled by a sudden outbreak of the disease in Paris. The French authorities tried to hush the matter up, and resorted to the expediency of calling the trouble "cholerine." [Reviving an old term introduced in the epidemic in 1831 to express a severe form of diarrhoea which was prevalent during the then cholera plague.]

About three hundred cases rapidly developed, and of these about two hundred died. Wicked as it seems to us, the authorities indulged in considerable municipal lying; considering it necessary to account for the sudden deaths in such a way as to prevent alarming the people and avoiding a panic. But while they were blustering about cholerine, cholera nostras and choleraic diarrhoea, scientific men were quietly investigating the disease. The comma bacillus, the exciting cause of cholera, was readily obtained in the patients' stools, and being cultivated was found identical with that discovered by Koch in India several years ago. The symptoms were the same as in true cholera, and post-mortem examinations were made confirming the results obtained by bacteriological experiments. Thus proving the disease to be true Asiatic cholera.

While these researches were being conducted, the Spanish government, alarmed by the continued reports of cholera in France, sent a committee to Paris to find out the nature of the so-called "cholerine." After a thorough investigation this Spanish commission reported to its government that the disease was Asiatic cholera. As a consequence, the government ordered quarantine regulations to be instituted along the Pyrenean frontier, and as yet no cases are reported from Spain.

When the Parisian physicians had succeeded in practically stamping out their embryo epidemic, the officials at first reluctantly, and at last openly admitted and published to the medical world that the disease was true Asiatic cholera; but the daily political papers still speak of the choleriform epidemic.

In spite of extraordinary safeguards of all the European nations west of Russia to prevent the disease from spreading



into their territories, disquieting reports are beginning to be heard. Several cases of "cholérine" are reported from Vienna and Triest; a few in Belgium in the little town of Jumet; and our health officers have been notified by our consul at Havre of an outbreak in that place; and our Department of State has news of an alarming character from Hamburg. Cholera broke out in this great sea mart, at first in the Altstadt, or old part of the city, where it is still chiefly raging, and then spread to Altona, a suburb, and also somewhat in the Neustadt or new portion. The latest report is that it has spread to the troops.

An official proclamation from the Hague has been issued to-day, Aug. 25, saying that Antwerp has been infected with Asiatic cholera.

As regards epidemics of cholera in our own country, there have been five outbreaks in the last sixty years. The first occurred in July 1832 and lasted till cold weather set in. Three thousand five hundred and thirteen deaths were reported. The second appeared two years later, but was checked after the loss of 941 lives. The third, the most fatal epidemic on these shores, commenced in May 1848, the total number of deaths being 5,071. In 1854 the fourth ended 2,509 lives; and in 1866, the fifth destroyed 1,195 persons. A few cases occurred also in 1887, but the disease was promptly checked.

By reason of the enormously extended opportunities for rapid communication between countries at the present time, the presence of cholera on the seaports of Europe constitutes a grave danger to the inhabitants of the New World.

Luckily, the inroad to cholera is checked at the approach of cold weather, so that there is little fear of an epidemic in the United States this fall; but should the disease land on our shores next spring, when thousands of people shall be flocking to the great World's Fair at Chicago, the loss of life and money will be almost incalculable.

The rapid incubation of the poison is also fortunate for us, for after exposure to the disease, the symptoms appear from

within a few hours to three days. So that no person affected before leaving Europe, even should he travel by the fastest steamer, could arrive at these shores without the disease having broken out on shipboard.

All our officials are on the alert, and every vessel that arrives from infected districts is sure to be closely inspected, and if necessary, quarantined. Should any cases have developed on board a vessel arriving at New York, they would at once be transferred to the fever ship, the Samuel Carlton, which has just been sent to the lower bay at New York for hospital service; and there is also abundant room for sufferers in the fever hospitals on North Brother's Island.

But, while there is little chance of the disease obtaining a foot-hold here, directly from persons suffering from the cholera, yet we are exposed to the evil of an epidemic by a more insidious, but equally dangerous mode of infection. This is by the importation of baggage, wool, furs, rags, and general merchandise from infected regions. It is more the difficult to guard against as its presence is unknown.

Our health officers are fully alive to this menace, and the Surgeon-General has sent out very strict orders for the disinfection of articles that come from suspected districts. These orders are printed below.

Should the disease enter Canada, where the sanitary regulations appear remiss, it would be well-nigh impossible to exclude it from the United States. That there is grave danger from this source is evident from the following abstract from the *Montreal Medical Journal* of August 1892. "In the face of these and other precautions observed in Great Britain, what steps have been taken in Canada? Practically, none. We are threatened with cholera from the East and small-pox from the West. The Minister of Agriculture reports against improvements at the Grosse Isle quarantine station on the ground that they cost money. Our local health committee spend their time and energies in squabbling over the appointment of a sanitary inspector instead of giving full power to the city medical officer to enforce the law and carry out reforms which are urgently needed."



While we believe that the Asiatic cholera, as a plague, will not visit this country, on account of the watchfulness of our health officers, and the efficient sanitary bulwarks that are erected between affected nations and ourselves, yet it will require the most sleepless vigilance, and the entire resources at our command, to ward off the epidemic from our homes.

---

---

## ANNOTATIONS.

**Official Quarantine Regulations against Suspected Merchandise.**—The Surgeon-General of the United Marine Hospital Service has issued a circular for the guidance of officers of the service and customs officials, in which he says that “information has been received that cholera prevails in the Caucasus, in eastern European Russia, in Persia, in Calcutta, and on the western littoral of the Red sea; and in view of the threatened further spread of the disease, and because of the danger which attaches to rags, furs, wool, hides, etc., which may have been gathered in the infected districts, and to articles of personal wear therefrom, it is ordered that no vessel having rags, furs, skins, hair, feathers, boxes, or baled clothing or bedding, or any similar articles liable to convey infection, hailing from any port in the districts aforesaid, and no vessel from any port carrying the above-mentioned merchandise or immigrants from the present infected districts, or from districts that shall hereafter be officially declared infected, will be allowed to enter any port in the United States unless provided with either a consular certificate or a certificate from a medical officer of the marine hospital service, or local quarantine officer of the United States, to the effect that the vessel, cargo, personal effects, etc., have been disinfected. The disinfection of the vessel must be in accordance with the most efficient quarantine practice, and will be by one or more of the following methods: Bichloride of mercury, sulphurous oxide, steam, heat. In addition to the above, thorough cleansing, flushing with sea-water, etc. For the disinfection of the articles of merchandise, personal effects, etc., mentioned in the circular, one or more of the following methods will be used, all articles to be unbaled: (1) Boiling in water not less than one hour. (2) Exposure to steam not less than one hour, the steam to be of a temperature not greater than 115° C. (239° F.), and unmixed with air. All bedding and clothing must be subjected

to method No. 1 or No. 2. (3) Exposure not less than six hours to sulphurous acid gas, made by burning not less than three pounds of roll sulphur to each 1,000 cubic feet of space. (4) Exposure not less six hours to an atmosphere containing three per cent of sulphurous acid gas liberated from its liquid state (liquid sulphur dioxide). (5) Solution of Carbolic acid of a two-per cent strength. This method No. 5 may be applied only to leather goods, such as trunks, satchels, boots, shoes; to rubber goods, etc., the articles to be saturated with the solution."

---

## REVIEW AND BOOK NOTICES.

**A New Pronouncing Dictionary of Medicines.**—Being a Voluminous and Hand-book of Medical and Scientific Terminology with Phonetic Pronunciation, Accentuation, Etymology, Etc., By John M. Keating, M. D. LL. D., and Henry Hamilton, with the colaberation of J. Chalmers DeCosta, M. D., and Frederick A. Packard, M. D. With an Appendix containing Important Tables of Bacilli, Micrococci, Leucomaines, Ptomaines; Drugs and Materials used in Antiseptic Surgery; Poisons and their Antidotes; Weights and Measures; Thermometric Scales; New Official and Unofficial Drugs, etc., etc.

Philadelphia: W. B. Sanders, Publisher, 1892. Price, \$5.00, cloth; \$6.00, sheep.

The book fitly commences with a short, general consideration of the principles of pronunciation as applied to medical words.

Then comes a very full table of medical abbreviations, which is succeeded by a table of suffixes and prefixes. Then follows the dictionary proper. This is up to date, and contains all the words which have sprung into existence through the newly prepared synthetical laboratory products used in the *materia medica*, and the present terms introduced through the study of bacteriology, and the technical words made necessary by the new operations and increased knowledge in specialties.

The principal word is printed in heavy type which readily catches the eye, and the explanations which follow are concise and clear.

At the end of the book, after the dictionary proper, there is an appendix of nearly one hundred pages, containing among other things, tables of weights and measures, both apothecaries and



metric, and comparative tables between them. Table for calculating the period of utero-gestation. The diameters of female pelvis and foetal head, nerve distribution, localization of the functions of the segments of the spinal cord. The chief characteristics of the principal bacteria. Table of ptomaines and leucomaines. The number of drops of different liquids required to compose a fluid drachm; a dose table; a list of incompatibles; a table of poisons; a list of the newer drugs; the synonyms of diseases, and the drugs and materials used in antiseptic surgery.

While this book does not contain as many words as Foster's Encyclopædic Medical Dictionary, nor as Billings' National Medical Dictionary, yet for the average medical reader it will be found amply sufficient, and it possesses the further advantages over these, that all the contents are found in a single and not too bulky volume, and the price is much less.

The volume is attractively gotten up and is printed on good paper, and reflects great credit on the authors and publishers.

**Diseases of the Nervous System.**—By Jerome K. Bauduy, M. D., LL. D., Second edition. Philadelphia: J. B. Lippincott Company, Publishers, 1892.

On reading the title of this book, one would expect to find between its covers a general treatise of all the diseases of the nervous system.

In this respect, however, one is doomed to disappointment, as but three general topics are considered—Disorders of the Cerebral Circulations, Meningitis, and Insanity.

The three subjects that are discussed, are fully and interestingly treated, and show the results of very careful and extensive reading.

Scattered all through the book are numerous and full quotations from various authorities. Yet the lectures are much more than a compilation of the pregnant thoughts of many minds, as they contain the mature opinions of a painstaking student and observer.

Although the title is misleading; the book is, on the subjects in which it deals, a valuable one both to practitioners and students.

**Annual of the Universal Medical Sciences.**—A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D.,

and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Colaborators, and Correspondents. Illustrated with Chromo-Lithographers, Engravings and Maps. Five Volumes. The F. A. Davis Company, Publishers, Philadelphia, Pa.

For the fifth time the *Annual of the Universal Sciences* has made its appearance.

Although but half a decade old this work is now so well known to the medical profession at large, that an extended review even of its main features is almost unnecessary. Suffice it to say that in the five large volumes, are condensed all that has been presented of value to the medical world during the past year. Each of the separate departments is under the charge of a man distinguished in his specialty, and as most of the reviewers have been on the staff for several years they are particularly fitted for their arduous task. Although the material is sifted out by so many hands, yet the completed volumes make a readable, valuable and harmonious whole; and enable one, with a minimum expenditure of time, to learn almost at a glance, the best thought on any particular subject that has appeared in the past twelve months.

Not satisfied with the improvements and the economies already lavished on the *Annual*, the editor has resolved to go abroad and publish the *Annual* simultaneously in French; thereby extending its circulation and bringing the yearly progress made by American physicians more prominently to the notice of our European confrères. All success to the undertaking.

---

The next term of the Albany Medical College will open on Tuesday, September 27, 1892, at 12 o'clock, M. The Introductory, Lecture will be delivered by Professor Sam'l B. Ward, M. D.

Dr. Henry Hun, who has been absent for several months in Europe, has returned.

The Fifth Annual Meeting of the American Association of Obstetricians and Gynecologists will be held in St. Louis, Mo., on Tuesday, Wednesday and Thursday, September 20th, 21st and 22d, 1892. Dr. A. Vander Veer of this city is its president, and many interesting papers are announced in its programme.



# THE ALBANY MEDICAL ANNALS

---

VOL. XIII.

OCTOBER, 1892.

NO. 10.

---

## A Discussion on the "Treatment of Pneumonia."\*

INDICATIONS FOR TREATMENT, BY JOS. D. CRAIG, M. D.

By pneumonia in this discussion is understood the acute croupous variety of inflammation of the lung.

The principles of treatment outlined in this paper are based upon the definition — that pneumonia is an acute, self-limited, general disease, due to a specific organism, probably the micrococcus of Friedlander, which expresses itself locally in a more or less extensive portion of lung principally by an exudation of rapidly coagulable fibrinous material within its alveoli.

Owing to the limits necessarily placed upon this evening's discussion, there are excluded from consideration —

1. *Mild pneumonias*, requiring either no treatment at all or only the simplest remedial or hygienic management.
2. *Aborted pneumonias*.
3. *Secondary pneumonias*, after acute dyscrasias, such as diphtheria, measles, erysipelas, and the other acute infectious diseases.
4. *Intercurrent and latent pneumonias*, occurring during the course of diseases which impoverish the blood and which are accompanied with emaciation and constitutional exhaustion.
5. *Traumatic pneumonias*, after fractures of the ribs, wounds of the thorax or occluded bronchus.
6. *Complicated pneumonias*, with pleurisy, gastro-intestinal catarrh, pericarditis or with abscess, gangrene or caseous degeneration.

---

\* Read before the Medical Society of the County of Albany, December 2d, 1891.

The treatment of all such pneumonias does not involve principles different from the ordinary uncomplicated variety, except that the additional factor of traumatism, or of complicating inflammation, or of degenerative changes, or of other concurrent conditions, must be taken into consideration in the management of such cases. The consideration of such cases would carry us far beyond the bounds of profitable discussion. We consider only uncomplicated forms of such severity that treatment is demanded.

*a.* As pneumonia is more liable to occur from well ascertained causes in certain individuals than in others, the prophylactic treatment of the disease is worthy of consideration. The former belief that strong and vigorous men past middle life (or at any period of life) were especially liable to the disease has been generally abandoned as involving erroneous principles. The disease is now known to be apt to overtake those whose bodily functions show a decreased resistance capacity to the germs of infectious disease and whose physiological integrity is below par. On account of low resistance capacity, therefore, the extremes of life, the overworked, the mentally depressed, the underfed, the convalescent from debilitating disease and those weakened from alcoholic, venereal and tobacco excess, are particularly liable to contract the disease. Such are protected, wherever possible, from the inroads of pneumonic bacteria by warmth of clothing, by the avoidance of sudden changes of temperature, by good food, cheerful and healthful surroundings, and by a properly regulated life, which shall seek to attain the highest nutritive activity of the cell life of the body.

*b.* The hygienic indications for the treatment of pneumonia are the same as for other diseases of its class. So thoroughly was this subject discussed in the paper on the "Indications for the Treatment of Diphtheria" (which see) and so similar to it, in general, are the principles involved in the hygienic treatment of pneumonia, that only the briefest recapitulation is necessary here. There is the same indication for the regulation of the sick-room and for the protection of others. There is the same demand for a well ventilated sick-room, with provision made for an abundance of fresh air and the avoidance of draughts; the same necessity for an equable temperature of 65° or 70° F.; the same need of cheerful surroundings and cleanliness, and rest in



bed and good nursing, and the destruction of the sputa by any one of the accepted methods of disinfection.

c. So far as the indications for the treatment of the diseased condition itself are concerned, it will be convenient and in harmony with the sequence of the symptoms to consider first the indications for the treatment of the period of congestion. In this early stage we have to deal with the severe initial rigor, violent above almost all other diseases; the sudden rise in temperature; the pain in the chest, if the pneumonia be near the surface and involve the pleura, and, finally, the danger to life sometimes threatening from the congestion and œdema of the lungs or from the collapse of a previously weakened heart. There is an indication here for the application of external warmth and local counter-irritation, for the administration of spirits, both alcoholic and cardiac, and, perhaps, for the use of one full dose of quinine.

In some cases, during this early period, the heart will be strong and the pulse full and bounding. In such cases the cardiac sedatives, of which aconite may be taken as a type, might be of benefit, if they ever find a sphere of usefulness in pneumonia, and might be given in the hope that the area of consolidation might be thus diminished in extent, and that, by an equalization of the circulation and by the reduction of the volume of blood through the diaphoretic and diuretic action of such a drug, the engorgement of the pulmonary vessels might be rendered, in a measure, less intense. To me this is a dangerous expedient in a disease in which the expression of exhaustion and weakness are prominent symptoms from the very first. A mercurial purge is sometimes indicated in the period preceding the hepatization of the inflamed area.

The elevation of temperature, with its expression in the acceleration of the pulse, the increase of thirst, and disgust for food, the pain in the back and loins, the prostration and muscular weakness, may be so severe that treatment is positively demanded. There is an indication here for the supply of the water lost by increased evaporation from the surface of the body and by elimination from the lungs; for the replenishment of the increased waste by highly concentrated and easily digested food, and for antipyretics, given in the hope that the reduction of the temperature will check somewhat the rapid tissue disintegration. For such

purpose as this, for me, antifebrin, or the other drugs usually classed with it, is preferable to quinine, because (1) the dose is smaller and more palatable, (2) the effect more prolonged and the cerebral influence less marked, and, (3) particularly, because of the analgesic influence of the former drug meeting the indications for the relief of the pain and muscular soreness in a way that the latter is powerless to effect.

The sleeplessness, the restlessness and the delirium become sometimes so pronounced that hypnotics and sedatives are imperatively demanded. I should like also to suggest here the influence of highly nutritious food in diminishing and controlling these three symptoms.

There is sometimes a most decided indication for treatment at the period of crisis with the sudden fall in temperature and its critical evacuations. There does not seem to be much difference of opinion here as to the necessity for alcoholic stimulation and nutritious food, for external warmth and the cardiac stimulants digitalis and strychnine.

In some cases there is an indication for the treatment of the shallow and rapid breathing which may become dyspnœic. Here the cause will indicate the treatment. If the dyspnœa be due to insufficient oxygenation and cyanosis supervenes, the inhalation of oxygen is called for; if the dyspnœa be due to pain, an anodyne will give relief; if the dyspnœa be due to collateral œdema, dry cups and digitalis and alcohol will be of service, and, finally, if the dyspnœa be caused by a diminution of breathing surface from the extent of lung tissue involved, a vigorous supporting treatment must be undertaken until the period of resolution opens again the alveoli.

In some cases there are indications for the treatment of the cough and consolidated masses in the lungs. There is an indication for the stimulant expectorants, particularly the ammonia salts, or for iodide of ammonium if resolution is delayed, or for turpentine in the "prune juice" expectoration of marked asthenic cases with typhoid symptoms, capillary hemorrhages and a weak heart.

Pneumonia is a wasting and exhausting disease; therefore, in all cases, there is an indication to sustain the vital powers of the patient. Of all other indications in this disease, the use of highly concentrated and nutritious food stands foremost.



In conclusion, I believe that while pneumonia is a self-limited disease, it is both unsound practice and false philosophy which will permit any case of pneumonia to run its allotted course without the benefit of such remedial measures as will give relief to even slight symptoms or will mitigate the severity of the disease.

To sum up the main indications for treatment, remembering that pneumonia is an exhausting disease occurring in individuals susceptible to it by reason of lowered vitality, I would tabulate the indications for treatment as:

1. Prophylactic, by avoiding the influences which render the individual susceptible to the disease.
2. Hygienic, in the care of (*a*) the sick-room, (*b*) the patient, and (*c*) in the protection of others.
3. Systemic, particularly regarding:
  - (*a*) The period of invasion, with the chill and rise in temperature, and the danger from the heart and lungs.
  - (*b*) The fever and its consequences.
  - (*c*) The cerebral symptoms, when pronounced.
  - (*d*) The period of crisis, with its tendency to collapse.
  - (*e*) The dyspnœa.
  - (*f*) The cough and consolidated portion of lung, and finally,
  - (*g*) The exhaustion and weakness which is apt to be so marked in all cases of the disease.

#### TREATMENT DIRECTED TO THE LUNGS, BY J. H. MITCHELL, M. D.

A rational treatment of pneumonia is one which must secure to each case its own individuality and consideration. Bleeding, antimony and blisters may be demanded in one case, quinine, opium and wine in another.

If the pneumonia is not intercurrent to some other disease, but happens idiopathically in a person otherwise healthy; if the mean body temperature remain  $104^{\circ}$  Fahr., the pulse does not exceed 120 beats per minute, and the respiration does not exceed 40 in the same time, the case must be regarded as a typically favorable case which will certainly begin to get well when the cycle of the pneumoniatic process is complete without any special medical treatment. It is sufficient to keep such patient in bed in a well ventilated room, and to relieve thoracic pain by applying leeches, fomentation, linseed or mustard poultices, etc. It is the

proper combination of remedies—not a single agent, or mode of practice, which must be sought for in its treatment.

Opium in some form is generally given to relieve pain and diminish the distressing cough; some of the alkalies which will act as a sedative to allay the cough and abate the congestive state on which it depends.

Dr. Wm. Hunt recommends the following as a dressing: a very thin layer of cotton applied over the affected side from spinal column to sternum and secured with collodion, smeared over it by means of a broad brush, then add thicker layers securing them in turn with collodion until a good padding is obtained. In double cases the dressing may encircle the chest. The advantage of this dressing is, the one dressing, if well applied, will last throughout the case, and hence the fatigue and discomfort of frequent poulticing are avoided.

The side in a unilateral case is held in a splint while the free side does the breathing. A first-class non-conductor is covering the chest, and there is no particular interference with physical examination to one who has a good ear. Some form of counter-irritation is almost invariably employed and is often abused, such as dry cupping, jacket poultice, blistering, etc.

At the onset a large mustard plaster to the chest allowed to merely redden the skin, is an excellent expedient during the progress of the inflammation; the turpentine stupe is generally the best application.

To assist the process of resolution and repair, the more permanent action of a blister will be serviceable. Bartholow, says: "Much is said about the blistering point in pneumonia, and the discussion is resolved into this. During the inflammatory stage blisters are harmful for the reason that they stimulate the nervous and vascular system, and are useful when the crisis occurs to assist in the liquefaction and absorption of inflammatory process." Dr. Kieder, of Springfield, in a paper read before the Medical Society of Illinois, May 2, 1889, and reported in the *Medical Record*, June 8, says: "The ice coil will be found effective in milder cases in reducing temperature and relieving pain if placed directly on the affected side." I am willing to admit that I have never tried it, nor do I think I would be very liable to, especially if it were a mild case.

In estimating the amount of genial and possibly moistened



air which should gently and freely pass through a sick chamber, allowance should be made both for the requirements of the patient and the attendants (the latter should be as few as possible in order to lessen the chances of aerial contamination). While the fresh air is essential in the management of all diseases, it is omnipotently indispensable in pneumonia when the patient is using but a part of the breathing apparatus in the place of two lungs.

It is more than ordinary ventilation that is required in such cases. What is needed is, a persistent systematic attention to a constant change of air in the apartments of the sick, by night, by day, each hour, each moment, and each second, and the twin companion of each one who enters the room should be a volume of pure air.

I have read that Dr. H. J. Sutton, of the Lincoln hospital, had the window by the side of his patients' bed opened for five minutes each hour (this in a London atmosphere in January).

It seemed at that time heretical to open a window by the side of a bed of a patient suffering with pneumonia in the coldest of winter, seemed like wantonly hastening the fatal issue, but the results proved the wisdom of his direction. I can say from my own experience that I have seen cases of pneumonia where I feel sure the fresh air had more to answer for the recovery than any other feature of the treatment. If it is (as is often stated) impossible for a fever-stricken patient to catch cold, what is there to fear?

The contact of the cold air upon the surface will lead to deeper inspiration, the colder air will find its way more readily into the deeper alveoli by mere displacement, and according to the well-known law of density, the colder the air the larger the actual amount of life-giving oxygen it contains.

VALUE OF ALCOHOL IN THE TREATMENT, BY A. T.

VAN VRANKEN, M. D.

You probably did not know when you suggested that I should take one of the subjects on the discussion of pneumonia, that I was a crank on the use of alcohol in pneumonia. I use that word "crank" advisedly, because it has come to pass that if a man shows the least bit of earnestness on any subject, he is at once called a crank, and anything he may say is either received

with no credit whatever or with so many grains of allowance that it has no value. If I were to be asked what I think of the value of the use of alcohol in pneumonia, to give a categorical answer to that question I should hesitate very much to answer it, because I don't think, considering my own experience or relation of myself to my brother practitioners as I have seen it, I could stand here before you and say that the use of alcohol has uniformly been successful in the treatment of pneumonia for the reason that if a man starts out in an impractical way, having a case of pneumonia on the left hand and a bottle of whiskey on the right hand; I have pneumonia here, ergo, I must have whiskey here, I think that man will come to grief nearly every time he treats his patient in that way. If I were asked to give my own opinion of the value of alcohol in the treatment of pneumonia, I should say, that if you will give me alcohol—I am going, perhaps, to make a rash statement, and you need not accept it if you don't want it—I should say, unhesitatingly, that in the treatment of this disease you may take all the rest of your truck and give me the alcohol, and I will not have any more funerals in pneumonia than you have, and I don't think I will have as many, on the belief that fifty cases of pneumonia will recover without any treatment, and if the man gives his whiskey in one class cases, he does not give enough to do any good. To get to the indications for the treatment of pneumonia, I should say, possibly or probably, they might be summed up in a general way as two; first, the condition of the heart, and then the symptoms of fever of which delirium is the prominent symptom. We all believe if we can carry our cases along so far as the vital powers are concerned, they are bound to recover, and I must say, in my experience, I have found too often that we younger men, perhaps, have treated the disease, forgetting that we have got a patient behind that disease. With that idea in view, I should say that when we find in our cases of pneumonia that we have a weak heart, if we have a feeble, febrile pulse, we should uncork our whiskey bottle at once, and if the cork is in tightly, don't stop to uncork it, but knock the top off the bottle and pour it out liberally. If you have a case of delirium with high temperature, be careful about your whiskey; but if you don't, I have seen case after case of pneumonia with delirium, that was active, that would calm down and be subdued when you gave whiskey in proper doses, and I



firmly believe it to be the case. Believing if you can sustain the vital powers that you will do your patient the most amount of good, I believe there you have the indications for the whiskey. What amount shall you give? There are two golden rules perhaps which it would be well for us to remember in those cases, and that is, first, there is a great toleration of alcohol in these cases of pneumonia; then, I believe, medium doses frequently given are of much greater value than larger doses at lesser intervals. I am something like the Englishman; when I eat pie, I eat pie, and when I give whiskey in pneumonia, I give whiskey. I have practiced medicine about seventeen years; it has taken me about twelve of those seventeen years to learn how to use the little common sense the Lord has given me during the other five, and I am not an old man yet. With that end in view, the question comes up, laying aside all joking, and I believe if we physicians would look at many of these things in their true light, there would be less trouble. I think if we sought the cause of giving medicine, and when we found it, give it with a free, liberal hand, you will do your patient good. As to the amount, no man can say just what amount must be given in any case of pneumonia. It is impossible to do that. Every case must be a law unto itself; but I should say, in an off-hand way, that where you have a patient that needs alcohol, if you were to give a tablespoonful of alcohol once an hour, which would be half an ounce, in twenty-four hours it would be twelve ounces; some cases would require less and some cases a great deal more. We need alcohol sometimes in the first stages, but in the second stage I believe the great virtue of alcohol exists. If you follow those things out intelligently, believing you are going to do good with it, you will undoubtedly do good, and if I had time to-night, I could give you some personal reminiscences of this matter which I think would show you the truth of which I am trying to speak. I don't want you to call me a knave or an idiot; I may be both, but when I tell you that in a young man, eighteen years old, with double pneumonia, I saw given thirteen quarts of whiskey in fifteen days, you will say that I practice what I preach. That was a literal fact, that that young man took thirteen quarts of whiskey in fifteen days, which was an equivalent of twenty-seven or twenty-eight ounces during the twenty-four hours. The nurse didn't drink it, and the doctor didn't drink it, and the patient did,

and he is alive to-day. That, you may say, is an extremely radical thing; but I do believe with all my heart that when we do need alcohol in those cases of pneumonia, we need it, and the next cases of pneumonia you get with those indications, give it until you get the full effects of it, and, of course, the contrary indications are those which you must observe yourself. Don't satisfy yourself, if you have a case of pneumonia, with dealing out a teaspoonful with a little water every four or six hours; if you do, the condition of the patient in the future will depend upon what his life has been in the past.

TREATMENT OF CARDIAC AND CEREBRAL SYMPTOMS, BY LORENZO HALE, M. D., ALBANY.

THE NATURE OF PNEUMONIA.—When a diagnosis of croupous pneumonia has been made, we bear in mind that we are dealing, as Juergensen has shown, not with an inflammatory condition, nor with a disease of local origin, but with an infectious constitutional disease, which runs a typical course.

George M. Sternberg's discovery of the *micrococcus Pasteuri*, and the subsequent investigations by Sternberg, Friedlaender, Fränkel and others, confirm this view. Croupous pneumonia cannot be produced by traumatism nor by the excitants of inflammation.

The fact that Juergensen has demonstrated that croupous pneumonia, being of a different nature from a phlogosis or inflammation, cannot be aborted by treatment (although admitting that abortive cases do spontaneously occur); and the other fact, that about eighty per cent (Juergensen) of patients recover under "expectant treatment;" these facts should not put us off our guard in our combat with this insidious and often rapidly fatal disease.

DANGER FROM COLLAPSE.—Something more than the expectant treatment of Skoda, or Fleischmann's Hahnemannian dose of a decillionth of a grain of phosphorus, or even Bennett's valuable restorative treatment,—some active interference is in order when pain, delirium or convulsions are present, or when intermissions and inequalities of the pulse, heart-weakening, œdema of the lung, cyanosis and paralysis of the bronchi, are presaging speedy death from collapse.

Death in pneumonia is due always to insufficiency of the heart. The right ventricle is found filled with coagula; the left ventricle is empty.



Attention to the cardiac symptoms is, therefore, of first importance in pneumonia; treatment of the local manifestation of the disease in the lung is secondary.

In collapse, or in deep cyanosis, treatment late is worthless. In the early stages of collapse, prompt and cautious treatment may avail to rescue the patient from the very jaws of death.

TREATMENT OF COLLAPSE.—The distended right ventricle must be unloaded. This is the one essential objective point in collapse. As soon as the burden of the right heart is alleviated, relief of passive pulmonary congestion and absorption of œdema is permitted. The heart and respiratory muscles then act more vigorously; more oxygen is received by the blood, and more blood is forced through the lungs into the jejune left ventricle; the heart, that royal *alma mater*, feeds the tissues with a richer oxygen-bearing stream for the restoration of brain and body, and most needed for her own toiling fibres.

Mechanical means may be employed, directed immediately to the burden which the heart carries. Such are general bleeding and aspiration of the heart.

Venesection often gives immediate relief in the case of a staggering heart with passive pulmonary œdema and slight cyanosis, even before collapse is imminent. Juergensen has said: "Most alarming symptoms yield to bloodletting; few measures can produce a more striking result."

But as the volume of the circulating blood is soon restored after bleeding, the relief is often but temporary and is obtained at such vital expense that "bloodletting should not be resorted to, even on a single occasion, except for the purpose of gaining time for the occurrence of the spontaneous termination of the disease." (Juergensen.)

Aspiration of the heart, to relieve intense passive pulmonary congestion and œdema, has occasionally been done.

Abstraction of blood from the heart has been attempted also by exhausting the air from over the greater part of the body by a "vacuum" apparatus.

Besides these direct mechanical means, various stimulants are used to bring about the same relief to the overburdened right ventricle. The action of stimulants is directed to the cardiac apparatus, not, like bleeding, to the cardiac contents.

Stimulants may render bleeding unnecessary; but where

bleeding is done, we should not rest with that only, but clinch the advantage gained by it, by the use of stimulants, in order to prevent the demand for a second bleeding.

Stimulants are always demanded when the first sound of the heart is feeble and the pulse very compressible and becoming slower, and respiration is becoming more rapid; and in sudden prostration or collapse, however early or late in the disease, whether the pulse is fast or slow and the temperature high or low. They are specially necessary to prevent collapse from the loss of the stimulus of heat, due to the sudden reduction of temperature, either spontaneous or artificial. A few doses will not always win the day permanently. Stimulants may be needed most assiduously for a period of several days.

Oxygen is supplied indirectly by the increased aeration of blood in the lungs caused by the operation of all cardiac stimulants. And oxygen itself may also be given directly by inhalation.

More than this, blood, after it is highly charged with oxygen, is needed in less volume than before, and, therefore, the work required of the heart is lessened by oxygen inhalation. Bleeding lightens the load of the heart, but starves it. Oxygen both reduces the burden and, at the same time, strengthens the heart. Oxygen inhalation, either in dilution with nitrogen-monoxide or otherwise, has obtained a permanent foothold in the treatment of pneumonia.

The stimulating effect of alcohol on the heart has already been fully described in the previous paper and will not be discussed here. There are other stimulants besides alcohol.

Coffee is of great value, as has been explained at one of our recent meetings.

Camphor is stimulant in small doses, and may be given by the mouth (a tablespoonful of camphor water every half hour to two hours, in conjunction with alcoholics), or in an enema, or hypodermatically in solution with oil.

Camphor acts more slowly than alcohol or musk, but its effects last longer. It is useful when milder attacks recur frequently.

Ammonia, *i. e.*, volatile aqua ammonia, by inhalation, or aromatic spirit, or especially the carbonate of ammonia, stimulates the spinal cord, the motor nerves, and the cardiac muscle. It is a powerful adjuvant to alcohol in collapse. In depression, with lowering temperature at the crisis, five grains of ammonium



carbonate, in infusion of senega or serpentaria, every three hours, is as useful now as in olden times.

Opium, in small doses, is a beneficent stimulant; but its secondary action on the inhibitory cardiac nerves and upon the respiratory centers in the medulla, and the consequent decreased elimination of carbonic acid, make it altogether out of place in cyanosis. Even minute doses, often repeated, soon pass beyond the limit of stimulant action.

Atropine, the antagonist of opium,  $\frac{1}{200}$  to  $\frac{1}{100}$  of a grain, may be given hypodermatically. It is a useful stimulant, of the cardiac sympathetic, in cyanosis, increasing the pulse rate.

Strychnia, *e. g.*, hypodermatically,  $\frac{1}{60}$  to  $\frac{1}{30}$  of a grain, is of value in cyanosis and œdema of the lung, by its action on the motor apparatus of the heart, and may need to be repeated every two to four hours.

Ether, by inhalation, or hypodermatically, and Hoffman's anodyne have immediate effect and are used occasionally.

Nitro-glycerin and nitrite of amyl cause tumultuous heart action by relaxing inhibition; while perhaps not properly termed "heart stimulants," they serve as such in a clinical sense, and are a potent aid in sudden heart-failure, especially with high temperature. The decline of temperature produced by nitrites is attributed to lessened oxydation. In addition to this, they are vascular stimulants, producing dilatation of the peripheral vessels, and thus, in a way that might be called mechanical, they abstract the burden from the distended heart. Their positive and immediate, although transitory, action gives time for the use and operation of other means.

Digitalis is the great cardiac stimulant and restorative. The sustaining power of digitalis may well lead to its routine use in every case of pneumonia, although, in the immediate danger in existing collapse, we should not wait for the action of digitalis alone, but quicker acting remedies, such as the nitrites, alcoholics, ammonia, hypodermics of ether, brandy, strychnia, etc., should be given at the same time.

The rapid, feeble and irregular heart of cardiac collapse following pneumonia, undoubtedly an indication of cardiac weakness, requires large doses of digitalis, repeated at short intervals, coupled with the free use of alcoholics.

Large and continuous doses of digitalis, as of alcohol, already

mentioned, ordinarily improper, become necessary in the emergency under consideration.

PROPHYLAXIS OF COLLAPSE.—Besides this antidotal use of large doses of stimulants in cyanosis and in approaching or actual collapse, stimulants have a field of usefulness as prophylactics against the development of heart-failure; and for this purpose are given in moderate doses from the beginning, and continuously, in every stage of the disease, even when the cardiac systole is strong.

Alcohol, ammonia and digitalis, and, also, opium, with the reservation already mentioned, are properly given in this continuous way, in moderate doses, for prophylactic and tonic effect.

Ammonium salts, besides their stimulant property, are expectorant and an aid to the resolution of the exudation in the air vesicles, and, as Benjamin Ward Richardson has taught, prevent the hyperinosis of the blood, which is exaggerated in pneumonia. The acetate, carbonate or muriate are useful throughout the disease.

Digitalis, given continuously, in small doses, by its tonic action on the heart, tends to prevent collapse, “and enables us, when collapse threatens, to rouse the failing heart with less loss of time than when digitalis has not been given from the commencement” (Balfour). Digitalis, also, by its diuretic action diminishes passive pulmonary œdema and œdema of the brain.

This continuous use of stimulants is of the nature of tonic and restorative treatment, like the use of beef-tea and tonic doses of quinia, strychnia, etc., intended to forestall complete heart-failure by fortifying the heart itself, by preventing tissue metamorphosis in the heart, and by continuing the supply of energy which is being wasted.

This defensively fortifying the heart is treatment acting still upon the condition of the heart itself and is not strictly prophylactic treatment against the operative cause, inhibiting the *fons et origo* from which heart-weakening results.

\* \* \* \* \*

FEVER AND PYREXIA.—Heat belongs in the list of cardiac stimulants. It is the most important of all, as without it, cardiac action is *nil*.

In collapse with low temperature due to the withdrawal of the stimulating action of heat on the heart, the substituted stimula-



tion from artificial heat should be mentioned as necessary, as obtained by warm applications and hot drinks.

Conversely: In collapse with high temperature is it safe to pursue the opposite course? can we abstract heat at this very time when every available stimulus seems needed to increase the power of systole?

Juergensen answers: "Unless the collapse be extreme, most patients can be treated by the direct abstraction of heat very satisfactorily, if sufficient care be used in the choice of stimulants and the temperature of the baths."

Heat in excess, like the toxic action of alcohol or of digitalis or of other stimulants, exhausts the heart.

To combat high temperature in fever, whether due to excessive production or to diminished loss of heat, is an important point both in the cure of collapse and in its prophylaxis.

There is a theory that high temperature is, in fever, a *vis medicatrix* for the attenuation of the microbe. A consideration of this view led a writer in the *Medical Record*, May 18, 1889, to say of pneumonia: "Let the fever alone; be content with small doses of antipyrin or antifebrin to do away with any evil effects of high temperature"!

\* \* \* \* \*

NERVOUS AND CEREBRAL SYMPTOMS.—Nervous conditions demanding sedative treatment (besides the ordinary nervous disturbances which are a part of the constitution of every case of fever, however mild), are, particularly, pains in different parts of the body, and such cerebral symptoms as headache, insomnia, delirium and convulsions.

These nervous symptoms are very exhausting to the patient, and actively causative of heart-failure and collapse, in any fever; especially so in pneumonia, where the heart is fatigued by battling against the obstruction in the lung, in addition to the ordinary heart-weakening elements of fever.

And this resulting heart-weakening with attendant cyanosis and carbonic-acid poisoning, acts, on the other hand, on the brain, as a cause in its turn increasing the degree of delirium and inducing coma.

Specially liable to delirium and to high temperature, is pneumonia of the apex; although Trousseau says that, except in

tuberculous patients, "pneumonia of the summit is not inevitably more serious than pneumonia of the base;" that delirium occurs also with pneumonia of other parts; that "the gravity of the inflammation does *not* depend upon its situation, but upon its *extent* and nature."

Juergensen teaches, on the other hand, that even in the case of the extension of the local process to the apex from other parts of the lung, it cannot be said that increased high temperature and delirium follow increase of lung tissue invaded; for, while this really appears sometimes to be the case from coincidence, and while it is true that, the greater the extent of invasion, the greater the danger to the patient, yet the smallest consolidations are often found to have the highest temperature and the most violent delirium.

Trousseau inadvertently admits a peculiarity in pneumonia of the apex by his statement that "the form of delirium so remarkably subdued by musk is, perhaps, most frequently met with in pneumonia of the summit."

Juergensen says positively: "Every experienced physician knows that it is in just these cases of pneumonia of the apex that meningeal symptoms and high fever are most apt to occur."

The cerebral symptoms in pneumonia, which come with either a sudden rise in temperature or with the development of high temperature, are similar to those observed in animals exposed to heat, especially to heat on the head. Thirst, as a cause of delirium, must not be forgotten. Simple high temperature is often the whole cause of cerebral symptoms in pneumonia. The remedy is obvious. Cold will remove these delirious symptoms as immediately as is done experimentally with animals exposed to heat. There is no *vis medicatrix* here, in hyperpyrexia.

An attack of pneumonia may be ushered in with high temperature and with violent cerebral symptoms simulating meningitis, and yet with total absence of thoracic symptoms or physical signs. Not until after two or three days can crepitant râle, or consolidation (quite frequently at the apex), be discovered. This is "cerebral" or "latent" pneumonia. It is frequent in childhood.

This simulation of meningitis may be due simply to high temperature, with no organic lesion in the cranium and no purulent infection. The alarming symptoms will then, as a rule, disap-



pear within twenty-four hours (Juergensen) by reduction of temperature with cold baths or affusions. But if antipyretic treatment is not sufficient, Juergensen uses narcotics.

Real meningeal complications are always grave. Meningitis may be a local inflammation, either traumatic or tubercular or pyæmic; or it is (as is frequent in pneumonia) the infectious cerebro-spinal meningitis.

Dr. Henry Hun (ALBANY MEDICAL ANNALS, August, 1888), reported a case in which the cerebro-spinal symptoms disappeared on the fourth day under treatment with bromide and iodide of potassium, and morphine and antipyrin. On the same fourth day pneumonic symptoms were first evident, consolidation, etc., over the lower lobe of the left lung. Eighth day, convalescence, normal respiration, absence of râles and of cough.

In his report of this illustrative case, Dr. Hun explains why croupous pneumonia and epidemic meningitis are associated in the same epidemic, and even in the same patient, by the fact that the micrococcus of the two diseases has been shown to be the same. And the metastasis from the pia mater to the lung, in this case of Dr. Hun's, is accounted for by the probability that the lung, perhaps because of the recumbent posture, became secondarily the *locus minoris resistentiæ*.

The diagnosis is often uncertain and difficult, as contraction of the neck is often absent even in severe meningitis; and stiffness of the neck and cerebral symptoms, when present in children under a year old, are not characteristic indications. (Ziemssen.)

Intercurrent cerebro-spinal meningitis, or meningeal symptoms, fever, headache, delirium, vomiting, stiffness of spinal muscles, convulsions, coma, are sometimes rapidly overcome by prompt treatment with cold, either the antiphlogistic ice-bag to the scalp and over the spine, or the antipyretic baths.

Leyden has insisted that patients with meningitis usually bear the baths badly, on account of the resulting depression. Cold affusions are also not well tolerated. Quinine, as an antipyretic, is rarely useful, and is entirely useless in the exacerbations of the intermittent form. (Ziemessen, Cyl., vol. 2, 737.)

Abstraction of blood by leeches or cups to the temples, mastoid processes or over the spine, have a good effect. General bleeding, although adding to the risk of collapse, may, in an occasional case, be necessary to diminish intracerebral hyperæ-

mia and thereby relieve headache, delirium, jactitation, convulsions, or coma.

Mercurial inunction and large doses of calomel and jalap, for derivative purgation, are used.

Sedatives, particularly morphine, are important. Chloral and chloroform or ether may be tried. Bromide of potassium and iodide of potassium, to promote absorption, are of service. Alcoholics are not contra-indicated.

Somnolence due to œdema of the brain may be treated by venesection to secure resorption of effused fluid. "General bloodletting is contra-indicated only in those cases in which, according to Oppolzer, somnolence is associated with an irregular pulse and an occasional intermission of respiration, indicating an œdema of the medulla oblongata, for the irregularity of both pulse and respiration would thereby be increased, and death might occur during the operation." Infusion of digitalis is highly useful in œdema of the brain, but it "is contra-indicated whenever there are disturbances of innervation on the part of the medulla oblongata, especially irregular respiration, as it can then only increase these threatening features." Ammonia, camphor, benzoin, etc., should supplant it for a time, and if digitalis is resumed, it should be combined with these stimulants. (Hertz, Ziemssen, vol. v. 285, 287.)

Delirium intensified by the high temperature of inflammatory complications in other parts than the lungs may be more or less checked by antipyretic and sedative treatment; but if connected with purulent infection from suppuration in the lung or elsewhere, is of ill-omen.

Severe cerebral symptoms are common in alcoholic patients; there may be restless and violent delirium, amounting to delirium tremens, lasting from three to five days, seldom longer; and in other alcoholic patients, who seem more debilitated, there may be a more quiet stammering delirium, with either insomnia or drowsiness. The temperature may be high or low. Juergensen mentions a temperature of 107.6° F. The production of sleep is often imperative; and where continuous delirium, jactitation and maniacal attacks are not checked by antipyretic measures, a large dose of quinine, a "sedative dose," will often have hypnotic effect. Bromide of potassium and chloral hydrat, or half-ounce doses of tincture of digitalis may be used. These



cases require alcohol usually; possibly up to a quart of whiskey a day.

The injudicious use of alcohol, in patients not addicted to it, may aggravate delirium. James F. Goodhart, M. D. (Guy's Hospital, 1889), gives details of such a case: Temperature,  $104^{\circ}$ ; pulse, 130; urine, one-sixth albumen; had been taking liquid food every half hour, and brandy freely; in one night took three pints of milk, a large amount of beef-extract, and about six ounces of brandy; no sleep; delirium increased. On the belief that she was being poisoned by beef-extract and alcohol, Dr. G. kept the patient for twenty-four hours on milk and water, a tablespoonful of champagne once in two hours, with a little opium at night. She slept and did uninterruptedly well. Dr. Goodhart believes that that woman would have died if he had persisted in "keeping her up" with stimulants.

In delirium of any adynamic state; in acute cerebral anemia, with diminution of blood-supply to the brain occurring after loss of blood, and with weak action of the heart; in collapse with low temperature; in delirium of inanition and from defective power of resistance to disease; or in delirium from intense malignity of the poison of pneumonia; alcoholic and other cardiac stimulants (not forgetting digitalis), and warm fluid nourishment should be given in small and frequent doses, together with the use of warm applications and other vascular stimulants.

Trousseau speaks of a violent "ataxic" delirium with insomnia, more common in women and in alcoholic patients, where there is delirium from the very first, quite out of proportion to the low temperature and the slight pulmonary symptoms; and where there is a "want of harmony" between the symptoms, as in one case a pulse of 84 and respiration of 88. For this form of delirium he gives a grain and a half of musk every hour for eight or ten hours, with or without opium, until improvement, which occurs "promptly or not at all."

"TUTO, CITO, ET JUCUNDE."—As soon as the severe cardiac and cerebral symptoms in a case of pneumonia have been overcome, sudden improvement is sometimes apparent; cyanosis and all distress have disappeared; cough and expectoration are not troublesome, and the patient may feel quite well, although, of course, more or less reduced in strength and with high pulse-respiration ratio. Where great relief comes suddenly on the

second or third day of the disease, under treatment, the case might pass, with a superficial observer, for aborted pneumonia, although the local process in the lung may be still in the stage of development and increase. To secure this comfortable state is a most satisfactory method of "amusing the patient while Nature performs the cure;" for many days may pass before the infiltration is removed. This state of well-being may come with spontaneous early defervescence; and pneumonia may terminate, even with disappearance of local physical signs, within twenty-four hours from the seizure.

While it is plain, from what has been here said, that there is no routine treatment which can be relied on as an abortive, or as the specific for pneumonia, yet a plan expected to aid in obtaining very early crisis is recommended in the enthusiastic paper of Dr. George W. Balfour, *Edinburgh Medical Journal*, November, 1891.

He gives twenty grains of chloral hydrat in half an ounce of infusion of digitalis. He considers a jacket poultice or cotton pack "a useful adjuvant, and appropriate diet indispensable." The subsequent dose is ten grains of chloral in half an ounce of digitalis infusion, given every four hours until the temperature is normal; then some tonic.

This treatment, "which soothes pain, stops cough, and relieves insomnia," is as truly on the sedative as on the antipyretic plan; for the chloral, which he admits does lower temperature, he allows to be substituted by one drachm of chloroform inhaled every two hours. He says of chloral: "The hypnotic action prevents insomnia, and so recuperates exhaustion, the analgesic action aiding on the same lines. The diminution of reflexes tends to cut short the disease; for if we regard pneumonia as a restorative reaction to an injury received, then this action of chloral may modify these reactions, and check wholly or in part the series of organic changes through which diseased action, when unmodified, must run; and this action will be specially valuable in those exhausted and, therefore, erethistic constitutions in which these reactions are most apt to be excessive and most dangerous. In this theory of inflammation, also, dilatation of the capillaries is not without its use; the freer circulation sweeps away the stasic elements in its torrent, and the influence of the morbid stimulus gradually dies away as the normal nutrition of the part becomes fully established."

The results obtained by Dr. Balfour, arrest of the disease usually within twenty-four hours, warrant the epithet:

"*Tuto, cito, et jucunde.*"



THE  
ALBANY MEDICAL ANNALS  
JOURNAL OF THE  
*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M.D., EDITOR.

---

VOL. XIII.—No. 10.      OCTOBER, 1892.      \$1.00 A YEAR.

---

During the last week in August, just before the September number of the ALBANY MEDICAL ANNALS went to press, the official announcement that cholera had broken out in Hamburg and its suburbs, had just been communicated to the world. For some little time previous to this published information, the epidemic had gradually been spreading about the wharfs and canals of this great seaport, and when it could no longer be kept secret, an epidemic was officially announced. In the meantime great damage had been done. Many people, unaware of the danger, contracted the disease and carried the seeds of contagion broadcast throughout the city, and numerous vessels crowded with emigrants were given clean bills of health and allowed to depart to other countries; most of the emigration turning toward America.

Up to September 24th, the number of cholera cases in Hamburg was 17,157, and the number of deaths 7,339.

The first vessel that brought the dread scourge to this country was the *Rugia*, sailing from Hamburg on August 23d, and arriving here on September 3d; she was closely followed by the *Normannia* and the others.

Owing to some misunderstanding as to the authority of the health officer of the port of New York, this official has been somewhat hampered in the discharge of his duties; but in spite of the friction which has prevailed, he and a numerous corps of assistants have ably succeeded in preventing the spread of the disease.

All praise must be given to Governor Flower for his prompt and generous response in time of need, in the purchase of Fire Island and its hotel to be used as a quarantine for healthy people

on infected boats. While in direct contrast to his public spirit, was the disgraceful exhibition of meanness, brutality and cowardice of the armed mob from Babylon and the neighborhood, by preventing by legal means, and in repelling by force, the occupation of the island by the passengers of the *Normannia*.

During the time the numerous vessels were held in quarantine, between September 5th and 19th, several persons were attacked in New York city; but in no instance has any case been definitely traced to an infected vessel, nor has the disease spread from any of the houses in which it was first discovered.

Occasionally a suspicious case has been reported from one or another of our border-towns, but in no instance was the disease found to be Asiatic cholera.

The scare has been distinctly beneficial to most of our large towns and cities, as it has incited the health officers to increased vigilance in abating nuisances, cleansing streets and yards, and making their districts as healthy as possible. Probably never in the history of the city, has Albany been as clean as it is now.

At the present writing, September 26th, it has been officially announced that the port of New York is free from cholera, and that there are no cases down in the bay, all the sick having recovered. Nor are there any known cases of Asiatic cholera in any part of the broad domains of the United States. As the greater part of the disease had been introduced by immigrants, and as the importation of steerage passengers has been stopped, the chances of introduction of fresh infection are very much lessened.

Although the danger seems to be passing away, yet vigilance cannot yet be slackened, and we must be on our guard for some time still lest there be a recurrence of the plague.

---

## ANNOTATIONS.

**How to Choose a Medical Specialty.**—Dr. William Osler delivered an address, in May last, before the American Pædiatric Society, discoursing upon the growth of medical specialisms during the present generation. He therein points out the advantages of a slow growth and a judicious differentiation, but he is also keenly alive to those disadvantages that must necessarily follow an insecure foundation. He believes in a wide field of



study, and a goodly period of time spent in it, before the neophyte is admitted into the ranks of the specialists. The complexity of the human body, and the close correlation of all its finer parts with one another, invite the profession to the formation of specialties, and to form with a high regard for our undivided economy. Dr. Osler quotes from Plato in this connection :

“Plato must have discussed this very question with his bright friends in the profession — Eryximachus, perhaps — or he could never have put the following words into the mouth of Socrates: ‘I dare say that you have heard eminent physicians say to a patient who comes to them with bad eyes, that they cannot cure his eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone, and not the rest of the body also, is the height of folly. And arguing in this way, they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you observe that this is what they say?’ This paragraph embodies the law and gospel for specialists.”

An undesirable result may always be expected when the attempt is made to manufacture a complex construction with materials that are ill-seasoned, and in too short a space of time. The West Africans have an adage which is pertinent to those who rush so rapidly into the specialties. It says, in effect: “An unfortunate spectacle is a blind man traveling on the wrong road, carrying a load of rotten nuts in a bag that is full of holes.”

Dr. Osler considers that the incentives to the speedy adoption of a specialty may appear strong ones, and nevertheless be unworthy of acceptance. He says: “The more speedy success that oftentimes comes from the cultivation of a specialty invites young men to early adopt a partial line of work. How infrequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed; far more frequently are we addressed another way — a student, with the brazen assurance that only ignorance can give, announces that he intends to be a gynæcologist or an oculist. No more dangerous members of our profession exist than those born in it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eye of colleagues defects

that too often require the arts of the charlatan to hide from the public."

Dr. Osler says to the young would-be specialist that a strong position depends upon a strong foundation, and he holds up the late Sir William Bowman, as the great modern exemplar in specialism, who was so pre-eminent in several departments that the identity of the physiologist is almost lost in the ophthalmologist. —*The Journal of the American Medical Association.*

**Salophen in Acute Rheumatism.**— From recent reports it appears evident that the new organic compound, acetyl-para-amidosalol, or salophen, is to take a very high place in therapeutics, not only in acute rheumatoid maladies, but in those in which a principal object of treatment is to secure an undisturbed and continuous intestinal antisepsis without risk of injury to the patient.

The *New York Medical Journal* of July 30th, 1892, contains an article on salophen, written by William H. Flint, M. D., of the Presbyterian Hospital, which overshadows some of the excellent effects which may now be expected from this extraordinary new remedy

Dr. Flint says that, during his summer hospital-service, he caused salophen to be administered to all cases of rheumatism, and that he was so well pleased with its action that he "desires to make known to his *confreres* the advantages of salophen treatment, hoping that their results may be as happy as his own."

The author presents detailed reports of six cases of acute rheumatism treated with salophen in 15-grain doses, given dry upon the tongue and swallowed with cool water, every three hours, and with sodium bicarbonate, in 10-grain doses, administered in the same way, thrice daily.

Dr. Flint's conclusions concerning the results obtained are stated by him as follows:

"From the above-given histories, it will be seen that in all the cases except the last the pains were quite relieved, the redness dispelled, and the temperature reduced to the normal point on the second or third day of treatment. In the one exceptional case, the patient may have exaggerated the intensity of her pain to prolong her stay in the hospital; but no objective symptoms persisted after the seventh day of treatment. It is probable that



a speedier result may be safely attained by the use of larger doses or of the same dose at shorter intervals. In none of the cases was the heart's action at all weakened, nor was the digestion impaired by the remedy. The urine was unaffected by the treatment."

The writer concludes that "We possess in salophen, a remedy equally as potent as the other salicylates, to control the symptoms of acute rheumatic arthritis, but devoid of their tendency to weaken the heart's action, to disturb the stomach, and to produce albuminuria and smoky urine."

It will be observed, as hinted by Dr. Flint, that he might, had he so desired, have used larger doses of salophen, as, indeed, others have done, but many will agree that our best and most lasting results are obtained with medium or small doses.

Dr. Flint adds: "It is the writer's purpose to conduct a series of experiments with a view to ascertaining whether salophen may be made available for securing intestinal antisepsis." We are glad to learn of this intention, not only on account of the author's well-known reputation in the treatment of gastro-intestinal maladies, but because other observers have already spoken of the value of salophen in such formidable affections as gastrectasis and other severe conditions of which abnormal fermentations constitute a symptom.

**The Treatment of Fracture of the Clavicle by a New Dressing.**—Bungner (*Deutsche Medicinische Wochenschrift*, No. 23, 1892), believes that the Sayre dressing meets the surgical indications of fractured clavicle better than any heretofore described. He believes that the same end can be accomplished by a three-tailed elastic T bandage.

The cross piece should be twenty-four inches long, and an inch and a half broad. To the center of this piece are joined three tails, each forty-four inches long and five inches broad. These are so attached that the middle tail is perpendicular to the cross piece, while the side tails are fastened somewhat obliquely.

The cross piece of the T is fastened to the sound shoulder.

The middle band is then seized, and carried over the back through the axilla to the upper part of the arm of the injured side, brought back to starting point and fastened. By this means the arm is drawn backward. The lower tail is likewise carried

over the back, around the injured arm just above the elbow and back to starting point and fastened.

This piece not only draws the arm backward, but also somewhat upward.

The last tail goes over the shoulder, making a loop to support the hand, back again over the seat of fracture, and is fastened behind to the other two tails.

The advantages of this dressing are:

The thorax is left free.

It need only be applied to the skin during the first ten days, and then can be put on over the clothes.

It is a much more comfortable dressing than either the Velpeau or Desault.

It is always in the same place, no matter what position the patient may assume.

The dressing can be applied in treatment of any fracture of the bone.—*The Therapeutic Gazette*.

**The New Rifle Bullets.**—Professor von Bardeleben has been studying the effects of the rifle bullets used in modern rifles. The new projectile has an inner core of lead, but this is inclosed in a casing of steel, which prevents the lead, even when softened by conversion of motion into heat, from becoming deformed and enlarged at the point of contact with the wound. This change is of much interest to military surgery. The weight of the new 8-millimeter projectile is much less than that of any of the old bullets. It is to its higher rate of velocity and pointed shape that its greater perforating power must be ascribed. Owing to the immense velocity it preserves in its flight, and its small surface of contact, it meets with little resistance on striking a person, causes little commotion of the neighboring parts, has no time to stretch the various tissues it encounters, and merely punches a hole, carrying the contused elements before it clean out of the wound, without seriously damaging the surrounding wall of the track. The wound is thus left in a fit state for healing by first intention, as no contused parts remain for removal by sloughing. But on the battlefield this absence of contusion, which frequently stayed the bleeding of injured vessels, must lead to more frequent deaths from hemorrhage. Again, in former wars, bullets which had been fired from great distances were found to strike the chest or other parts of the body, perhaps to break a bone, and then to



glance off or rebound without penetrating farther. This is now impossible; a projectile coming from enormous distances, if it wounds at all, has sufficient power to pass through, cutting any vessels or organs it may meet in its way. Colonel Boonen-Rivera, reporting on the civil war in Chili, where he held the post of brigade-commander, says that the number of dead on the battlefield was many times—according to his observation four times—larger than that of the wounded. This is the only war in which the new Mannlicher rifles with steel-covered projectiles have been used.—*Medical Record*.

**The Plasmodium Malariae.**—At the meeting of the Medical Society of the State of California, April, 1892, Dr. A. W. Hoisholt, of Stockton, read a paper on the plasmodium malariae. After mentioning the principal ideas brought forward as to the nature of the disease, from the time of Hippocrates to the middle of the present century, the author alluded briefly to the most noted germ theories and the character of the different microorganisms claimed by various investigators to be the cause of malaria: (1) Salisbury's unicellular alga, palmella gemiasma (1886); (2) Lanzi's germ-ferment, identical with bacteridium bruneum (1866); (3) Eklund's fungus, limnophysalis hyalina (1878); (4) Kleb's and Tommasi-Crudeli's bacillus malariae (1879); and (5) Laveran's oscillaria malariae, now known as plasmodium malariae (1881). Since Laveran first published the results of his fundamental researches, many eminent investigators have corroborated his discovery and contributed largely to our knowledge of the parasite of malaria, having ascertained that the parasite attacks the red blood-corpuscles, lives and grows within them, and finally brings about a disintegration of them.

The following color-test of Romanowsky was considered by the author as the best for the demonstration and study of the phases of the parasite. After taking the proper precautions in removing the blood from the tip of the finger, it is fixed on cover-glasses and heated, at a temperature of 105° to 110° C. (220° to 230° F.), for about half an hour. The cover-glasses are left for twenty-four hours in a neutral solution, consisting of a mixture of equal parts of a one-half per cent aqueous solution of eosin and saturated aqueous solution of methylene blue, diluted one-half with distilled water. Romanowsky examined the blood in this manner in fifty cases of different diseases not malarial, and

in health, without being able to detect anything resembling the plasmodium. The investigator has recognized, by the above method, a protoplasm and a nucleus in the parasite, and has detected a karyokietic metamorphosis in the latter, introducing the process of sporulation.—*Occidental Medical Times*.

**A new Method of securing Dilatation of the Os**, in protracted labor, has been discovered by Prof. J. F. Bird, of Philadelphia. It consists in making the patient smoke a pipe until nausea is produced. When carried beyond this point, it will probably produce dilatation of the mouth, with vomiting.—*Medical Record*.

---

## REVIEWS AND BOOK NOTICES.

**The Diseases of the Stomach.**—By Dr. C. A. Ewald. Extraordinary professor of medicine at the University of Berlin. Authorized translation from the second German edition with special additions by the author. By Morris Manges, A. M., M. D. With thirty illustrations. New York. D. Appleton & Co. 1892.

It is with much pleasure that we have looked over the careful translation by Manges of Ewald's Diseases of the Stomach.

The great progress made in the physiology of the digestive organs, and the recent ingenious and scientific methods of examination of the stomach contents introduced in the past few years by earnest and industrious rivals in this field, have opened up a vast amount of practical knowledge that is unrecorded in general books on diseases of the digestive system even of comparatively recent date.

In the present book are brought together, compared and incorporated, the results of the most important verified investigations which have appeared in the numerous medical journals, together with the conclusions derived from his own experimental study, and from his vast clinical experience in these maladies.

The first edition appeared in 1888 and met with such ready recognition that a second edition was called for in nine months, and it had the distinction of being translated into the Russian, Italian and Spanish languages, and now, also, in English. The edition now under consideration represents the third German issue.

In his treatment of the subject, before taking up the considera-



tion of the diseases of the stomach, he deals very fully with the technique of the examination of this viscus, and the methods of determining the acidity and the acids present, also of the determination of the digestion of albuminous and starchy substances, and the absorption power, and motility of the organ. He also devotes an important and interesting chapter to the correlation of the diseases of the stomach to those of other organs, and the practical value of modern chemical tests.

While the book is the peer of any, in the ordinary well recognized diseases of the stomach, yet it is to the above-mentioned carefully described latest methods of examination of the stomach and its contents, opening up as they do possibilities in accurate diagnosis undreamed of before, that the book is of paramount importance, and in this respect is equaled by no other.

The work is amply illustrated with cuts which are mostly original, and has the pleasing appearance of the works published by Appleton.

**Uses of Water in Modern Medicine.**—Vol. 2. By Simon Baruch, M.D. The Physician's Leisure Library. Geo. S. Davis, Detroit, Mich. 25 cents.

**The Electro-Therapeutics of Gynæcology.**—Vols. 1 and 2. By Augustin H. Goeiet, M.D. The Physician's Leisure Library. Geo. S. Davis, Detroit, Mich. 25 cents.

**Cerebral Meningitis.**—By Martin W. Barr, M.D. The Physician's Leisure Library. Geo. S. Davis, Detroit, Mich. 25 cents.

**Cancer.**—By Daniel Lewis, M.D. The Physician's Leisure Library. Geo. S. Davis, Detroit, Mich. 25 cents.

**Contributions of Physicians to English and American Literature.**—By Robert C. Kenner, M.D. The Physician's Leisure Library. Geo. S. Davis, Detroit, Mich. 25 cents.

The above titles give a fair idea of the different variety of subjects treated in this series. As the name, The Physician's Leisure Library, indicates, the books are not deep and exhaustive treatises, but are pleasantly written scientific essays.

The "Contributions of Physicians to English and American Literature" is quite different from the ordinary run, and is very

entertainingly presented. It briefly describes the life of each author quoted, and then follows one or more representative selections from his works. We wish the author had made the selections fuller and increased the number of authors.

---

### PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets received :

Clinical Lecture Delivered at the Second Annual Meeting of the Association of Military Surgeons of the United States. By N. Seen, M.D., Ph.D., of Chicago.

Original Research in Relation to Animal Economics. A socialistic study. By Frank S. Billings, M.D.

A Public Scandal. By Frank S. Billings, M.D.

Progress in the Care and Colonization of Epileptics. By Frederick Peterson, M.D.

Outline of a Plan for an Epileptic Colony. By Frederick Peterson, M.D.

The Treatment of Epilepsy. By Frederick Peterson, M.D., New York.

Report of the Chemist of the Maryland Agricultural Experiment Station, from the fourth annual report. By H. J. Peterson, M.D.

The American Newspaper Directory. George P. Rowell & Co., 10 Spruce street, New York.

Hepatic Abscess, report of a case with remarks upon the Amoeba Coli. By William A. Edwards, M.D., and James Sears Waterman, M.D.

The Necessity for Early Correction in Congenital Club-foot. By H. Augustus Wilson, M.D.

Two Cases of Tubercular Osteo-Myelitis of Tibia. By J. T. Jelks, M.D.

Comparative Value of Mercury and the Iodides in Treatment of Syphilis. By James T. Jelks, M.D.

Some Effects of Blennorrhœa in Women. By James T. Jelks, M.D.

Asepsis and Antisepsis as Applied in the Lying-in Chamber. By William Warren Potter, M.D.

Pelvic Inflammation in Women. By William Warren Potter, M.D.



# THE Albany Medical Annals

---

VOL. XIII.

NOVEMBER, 1892.

NO. 11.

---

## Albany Medical College Opening.

ADDRESS DELIVERED SEPTEMBER 29, 1892,

S. B. WARD, M. D.

---

GENTLEMEN.—In accordance with time-honored usage we have met together to-day to thus publicly open a session of the Albany Medical College.

This is the sixty-second time that a lecture introductory to the regular course has been delivered, and so many topics suggest themselves as appropriate to the occasion that one scarcely knows which to select. We might, with justifiable pride, point to the very honorable history of your Alma Mater; might rehearse to you the names and illustrious deeds of those who have been enrolled as teachers in this faculty; might point out to you many, both living and dead, whose professional careers have been, or still are, so justly famous that we are all proud to remember that they once sat where you sit to-day.

Or we might with propriety remind you how very much greater are the privileges that you enjoy as students to-day, than were offered to any one of your faculty during his undergraduate career. Then the entire curriculum of medical study consisted of two courses of lectures of some four or five months each; you all know what the requirements are to-day for obtaining the degree of Doctor of Medicine and they need not be repeated here. It is not probable that these changes were made solely on account of the belief on the part of our

wise legislators that medical students of the present generation are so much more stupid than their predecessors, but other considerations also had great weight. Among these latter may be mentioned as the principal one the fact that you are all to go forth much better equipped for your life-work than any of us did; for you are taught a host of facts, and of theories of the utmost importance in their practical bearings, which were not taught us, and could not have been taught us because they were not at that time known. As you look around on your group of professors, reflecting how little they knew of medicine on the day when they first proudly grasped their sheepskins, and how very learned they are now, let it impress upon you the fact that your student life, if you would hold even a respectable position in the ranks of your profession, must close only with your latest breath.

Or we might give you a whole hour's talk full of good advice. But we have noticed that too frequently good advice resembles nauseous medicine; it would do a lot of good if it was only retained and had its normal therapeutical effect; but it is too often rejected. We will take it for granted that you have had administered by your parents and spiritual advisers all the doses of morality that your constitutions will tolerate at present; but do not let what you have received go to waste. We may, however, take it for granted that you have come here, as most students do, with the determination to learn all that you possibly can, without allowing that intention to interfere too seriously with your having a good time. If this is your desire let me urge upon you just one point—that you cultivate entire regularity in your habits. Get your sleep regularly and plenty of it; get your outdoor exercise and recreation regularly and in abundance; keep your minds at all times fresh and bright, by keeping your bodies in good physical condition; and then if you further cultivate the habit of mental concentration when you are doing mental work, you will accomplish much more at the end of the term with three or four hours reading each day, than you possibly can by heedlessly and sleepily poring over your text-books for six



or eight hours when already fatigued by the day's work at the college. This course is advised not on any high religious or moral grounds, but because we all know, from extended observation, that it pays.

Some of you are occupying these seats for the first time; others fondly hope that this is the first day of their last session, and we trust that no one of you may be disappointed. We intend to make the course such that he who finally fails to pass, if such there be, will be forced to admit that it is only because he himself has not been regularly attentive and diligent throughout the year. Studying many hours a day by spurts, and cramming for examinations ought not to, and will not, answer the purpose. Make it a point to attend every one of the prescribed lectures, and read up on each while still fresh in your minds; and do not miss an examination.

In some capacity or other we are all interested in the subject of medicine; and it has seemed that a few minutes might be employed with profit in the consideration of the rank properly to be assigned to our branch of study among the sciences, and to the relations of the different branches of our science to each other.

There are those, by the way, who claim that medicine is not a science at all, but only an art. Science has been said to be "the philosophy of art;" it has also been defined as being "an assured knowledge, founded on equally assured principles." Both these statements are true, but they rather come under the head of what Mr. Choate used to call "glittering generalities" — they do not convey any very definite idea. That the sun rises approximately in the east is a fact coming within the domain of astronomy; that the moon does the same is another fact; the same is true of each of the planets. But ten thousand such isolated facts would not make astronomy a science. As soon, however, as the astronomer collates all these facts, reasons upon them, concludes that so far as this single phenomenon is concerned the heavenly bodies do not move at all; that their rising and setting is only apparent, and due to the rotation of the earth on its own axis in the

opposite direction, then his art becomes a science. By a process similar to this all the natural sciences are built up.

We often hear natural laws spoken of; but bear in mind that these differ entirely from the laws of metaphysics, which are drawn from the recesses of our inner consciousness; and from the laws passed by our assembly and senate and signed by our Governor—human laws. Ever since water existed it has shown a tendency to run down hill; and ever since apples grew they have fallen to the ground upon reaching maturity; but many generations of men had observed these phenomena, and others of precisely the same nature, before the generalization was reached that every particle of matter in the universe attracts every other particle with a force directly proportioned to its mass, and inversely proportioned to the square of its distance. This, though called a law, is only the general statement of a fact, to which there is, so far as we know, no exception whatever; but, on the other hand it does not appeal at all to our reason, and could never have been argued out *a priori*. As soon, then, as a series of facts can be collated, reasoned upon and general laws formulated, it may be said that a science is established. If, in addition to all this, deductions can be drawn from the laws we suppose we have discovered, and experiment, founded on these deductions, leads to the discovery of facts previously unobserved, then the science is on a solid foundation. Adopting this as our test there can be no doubt that medicine deserves to be ranked as a science. Let us take one single branch and see if the conditions have been fulfilled. Certain microscopic organisms were found to exist in the blood and some of the organs of an animal dead of anthrax. This might have been a simple coincidence. Other animals were examined, and hundreds of others, and in every single case the same bacillus was found. Careful observation, moreover, failed to detect this particular bacillus in an animal dead of any other disease. It was, therefore, concluded that this bacillus was in some way the cause of this disease. It was then reasoned that if this was true the injection of these bacilli into the body of a



healthy animal ought to produce the disease. The experiment was repeatedly tried with the result that each time the injected animal died in a few hours with precisely the same symptoms as were manifested by the one which furnished the poison.

Only recently in Greece field mice appeared in such alarming swarms as to threaten the utter destruction of the growing crops, and the farmers and government were at their wits' ends to discover efficient means to combat the pest. At the suggestion of Pasteur, Prof. Loeffler, of Griefswald, was applied to. He had discovered that the field mouse (*Arvicola arvalis*) was very susceptible to the inoculation of a certain bacillus, and also to infection with the same through the alimentary canal. Cultures of this bacillus were furnished in large quantities, and bread soaked with the liquid containing them was placed in the neighborhood of the burrows in which the mice dwelt. It had been previously amply proved by experiment that the bread thus soaked could be eaten by man and the ordinary domestic animals with entire impunity. The process of destruction was hastened by the fact that the living mice feasted on their dead brethren, and the pest was abated in time to save part of the crops and avert a famine. No method known to man five years ago could have safely accomplished this result.

Again, it has been shown that if succeeding generations of bacilli be artificially propagated outside of the living body their virulence diminishes—the virus becomes attenuated. In fact it can be said to be pretty well established that bacilli exert their baneful influence by means of a certain kind of animal poison, a toxalbumin which they produce, and it is this toxine which becomes less active in the attenuation. It has been further observed that if animals are very gradually subjected to the effects of this attenuated virus in increasing doses they get into such condition as to withstand the effects of the original poison entirely—they become immune, as the phrase goes.

It was subsequently discovered that this immunity was due

to the presence in the blood of the immune animal of a certain organic substance which is an exact antidote to the original poison, and is therefore called an *antitoxine*. In at least three published and well authenticated cases tetanus has been cured in the human subject by the injection of the blood-serum of one of the lower animals previously rendered immune to this disease. And tetanus has, up to this time, been one of the diseases in which all known remedies were most notoriously unreliable and ineffectual.

It has not yet been proven that the diseases which we know as the acute exanthemata — scarlet fever, measles and the like — are due to the presence of micro-organisms. Such is almost universally believed to be the case; but the belief is founded principally on the analogy which exists between these and diseases of known bacterial origin. It is now less than six months since Dr. Sternberg of the U. S. Army and Dr. Griffiths, of Brooklyn, have proved that the blood-serum of a calf rendered immune to small-pox by vaccination will destroy the efficacy of the vaccine poison — in other words that these greatly dreaded maladies are in still another respect analogous to the germ diseases. It does not now appear as if we were too credulous, or too hopeful, in predicting that in the near future medicine may give to the world protection against the whole list of germ diseases, as free from danger and as efficacious as is vaccination against small-pox.

In view of what medicine has accomplished in this direction alone, and of the intelligent and reasoning manner in which the results have been arrived at, we need have no hesitation in boldly claiming that medicine must now be ranked as a science. In some other branches of medicine the results may not have been quite so brilliant as in bacteriology; if they have been they do not present so much claim to novelty and do not so deeply impress us at the present day. But if any of you will take the trouble to carefully read such articles as that on the *Skeleton*, in Todd & Bowman's *Cyclopædia of Anatomy and Physiology* you will find that even dry bones can be made to yield material for most fascinating generalizations.



Having settled, to our own satisfaction at least, that medicine is truly a science let us see where to place it in the list of such. As we look over the whole range of human knowledge we find three great classes of subjects considered. First, there are a host of phenomena to be investigated which have nothing to do with the material universe, which involve the emotions, the will, the intellect, and because they are beyond the pale of matters physical the sciences which treat of them are known as *metaphysical*. Second, quantities have many properties and bear many relations to each other the consideration of which constitutes the science of *mathematics*. And, third, the objects constituting the material universe—the planets and stars, the stones and the trees, the bacterium and man—become the subject of our study, and the sciences which take up these various branches of research are known as the *natural sciences*. Some of these investigate the phenomena presented by the inorganic kingdom, and are known as *physical sciences*; others consider the phenomena of living things and are known as the *biological sciences*. There are but two of these latter—*botany* which studies the vegetable kingdom; and *zoology* which has to do with animals, both of these having, of course, many subdivisions. The border-line between these two branches of science is not always as distinct as might at first sight be supposed. For instance, at any reasonable hour in the morning, it is not usually difficult to distinguish between a horse and a tree. The animal has a power of voluntary motion which the vegetable does not possess; but when we come to the border line in the microscopical world some organisms, although undoubtedly vegetable, possess the power of independent motion just as truly as the lower forms of animal life. The horse in the process of respiration absorbs oxygen and gives off carbonic acid, while the tree does just the reverse; this distinction also is lacking between some of the lower forms of life in the two kingdoms. The vegetable as a rule has the peculiar green coloring matter, called chlorophyll, which is not found in animals; but here again the distinction fails. The mode of

propagating the species is very different, as a rule, in the two kingdoms; but on the border line this cannot be utilized as a distinguishing feature between the two. As a rule the animal has sensation, the vegetable has not; the animal takes its food into an internal cavity for digestion, the vegetable does not; the animal relies for its food, and consequent growth, on other organisms, while the plant alone has the power of converting inorganic substances only, which it takes from the air and soil, into a living organism. But in some cases all these distinctions either fail or cannot be practically tested, and even to-day the most careful and intelligent observers are in doubt as to the kingdom to which certain growths should be assigned. Indeed could we to-day see an animal looking in many respects like a horse, but only the size of a fox, and having toes instead of hoofs; or another animal bearing a general resemblance to a bird, but having no feathers and being provided with teeth; or an immense lizard flying through the air on wings which measured twenty feet from tip to tip, we might be in doubt as to the proper classification of each, or else whether it would be advisable to dine out again for the space of a month; yet geologists soberly assure us that such creatures have existed by the thousands requiring no microscope to discern them.

But to return to our classification. We have seen that natural sciences are divided into *biological*, which we have just considered and *physical*, to which latter let us turn for a moment. *Physical sciences* deal with the material universe and the laws which govern all its subdivisions. First, we have *astronomy* which holds for its realm all the heavenly bodies, our own planet included, and calling mathematics to its assistance propounds the laws under which they roll through space. Second, *natural philosophy*, or *physics* proper, which studies the laws which govern bodies in mass on our own planet, and derives great assistance from both mathematics and cunningly devised experiments. Third, *chemistry* which investigates the ultimate constitution of all bodies, organic and inorganic, shows that they are all composed of a compara-



tively few elements variously combined with each other, and studies the reciprocal reaction of bodies in a molecular condition. And last, *geology*, including mineralogy, which studies the various inorganic materials which go to make up this globe, the successive layers which compose its crust, and, going back of all human history or tradition, shows in what manner the Almighty saw fit to evolve from chaos the complete, beautiful and ever varied world which He has furnished for our temporary home. It incidentally derives great aid from chemistry, and must necessarily take into consideration the botany and zoology of by-gone ages.

Investigators in almost every branch of the natural sciences have at one time or other in the world's history been scoffed at, ridiculed or persecuted by the theologians on account of the conclusions to which they were forced as the result of their researches. The theologians claimed that the scientists were sceptics and atheists because, for instance, they were persuaded that the Mosaic account of the creation of the universe could not be literally accepted; it was claimed that there was a conflict between science and religion. Now I want to submit for your earnest consideration one thought in this connection. We all believe in the existence of a Deity with the powers and attributes ascribed to Him by the theologians; we all believe that He created the universe, and that He also created in us the faculties which we possess and the mental necessity for reasoning upon facts and arriving at conclusions; we also believe that in some sense or other He inspired the writing of the Holy Scriptures. Now it is simply impossible that such a being should have written one thing in the Bible and another thing in the rocks or the stars; it is impossible that there should be any conflict between true science and true religion. The trouble resides wholly in the fact that both theologians and scientists are human, and therefore, liable to err. Supposed facts may have been badly observed; or the array of them may not be sufficient for the purpose for which they are used; or the reasoning may not be logical; or the theologian may be in error in his interpre-

tation of Holy Writ, which latter has thus far in most cases turned out to be the fact. In any event, gentlemen, it is impossible that there should be any conflict between true science and true religion.

We have seen now that there are three great groups of sciences—the metaphysical, the mathematical, and the natural. The prime object of medicine is to prevent and cure disease. To accomplish this the science of medicine must first thoroughly investigate the healthy animal, man, from every point of view; must then equally thoroughly investigate all the processes of disease and the methods of combating them; and, finally, the practice of medicine consists in applying the principles and remedies to individual cases. Since man is a living animal the science of medicine belongs to the zoological group of the biological division of the natural sciences.

Concerning the metaphysical and mathematical sciences little more need be said save that in some cases the influence of the mental condition of the patient on his physical well-being cannot be doubted, necessitating considerations and treatment purely metaphysical. There are two notable peculiarities also about the mathematical sciences. One is their exactness, and the other the convincing character of their demonstrations. The sum of the three angles of a plane triangle is always equal to one hundred and eighty degrees—never a second, or a thousandth of a second, either more or less. And when the demonstration of this fact has once been understood the conviction of the truth of the statement is absolute and cannot be gainsaid. Clergymen, lawyers and doctors may differ; but no one ever heard of a mathematician's disputing a problem of Euclid. 'It may be proven in half a dozen different ways; but once proved in any one way it must stand for all time. And all the other sciences become exact just in proportion as mathematics can be applied to them.

In the pursuit of its legitimate end medicine must study the living body in health and disease. The body is simply a material structure and the study of this constitutes anatomy.



The consideration of the processes by which the life of the body is maintained constitutes physiology. If an engineer were put in charge of some machine which he had never seen before the very first thing he would do would be to examine every part—all its levers and rods and valves and stop cocks—and this he would do while it was at rest and presumably in good condition. This, gentlemen, is precisely what we must do. We must first of all become thoroughly well grounded in normal anatomy. A knowledge of anatomy in all its details is the corner-stone on which the whole superstructure of medicine rests; if that is not well laid the building must inevitably be unsubstantial. If you have not a minute and accurate knowledge of the machine at rest you cannot possibly have an intelligent understanding of it in motion. You may learn from books to repeat descriptions of the various organs and their relations to each other; but this will not give you what the good people call a *saving* knowledge of anatomy. To obtain this you must see all the organs for yourself; you must see them over and over again; you must dissect in season and out of season—every opportunity you can get. And that branch of anatomy known as histology, which studies the intimate microscopical structure of the tissues and organs, has, of late years especially, attained an importance scarcely second to gross anatomy.

Next in order comes *physiology*, that branch which studies the various processes in action during life—the manner in which the various organs perform the duties assigned to them. The exact nature and constitution of that evanescent, intangible and wonderful force the presence of which makes the body a living man, and the departure of which leaves it an inanimate corpse, we do not know—very possibly a comprehension of it is beyond human ken. But ours is not the only science brought into touch with incomprehensible conditions. As the astronomer gazes into the heavens on a clear, bright night he may see our near neighbor the moon. I say our near neighbor, for its distance may be measured in miles, and if a good road led to it, and we walked four miles an hour for ten

hours a day, we could reach it in something less than seventeen years. He may see two or three planets, bodies not yet very distant—only a few thousands of millions of miles, more or less. He will also see the fixed stars with dark spaces between them, and turning his telescope towards these spaces will there see hundreds of stars invisible to the naked eye with dark spaces between them. We must admit that we are now looking a great way off; for if a cannon ball could keep up its initial velocity directly towards one of these it would not reach it in fifty millions of years—and that is a very long time. But what is he to think of the spaces between these stars; it is impossible for him to form any mental conception of infinite distance—distance with no limit—and equally impossible for him to conceive of any boundary beyond which there is no space. And yet we all know that space must be either bounded or boundless. At every turn in all the sciences we come upon conditions which we must admit, but which it is impossible for us to understand, and this failure is simply due to the limitations of the human intellect.

If physiology, then, has not taught us everything it has taught us a great deal, and to hold up what it has not accomplished as an opprobrium to our profession is a gross injustice. When it comes down to the ultimate reason for things what does the physicist know about the *reason* for gravitation. He may lay down the rule under which bodies attract each other with great exactness; but he is then just as far from explaining *why* they attract each other as we are from explaining the vital force. When he states the law of gravitation and tells you that that is the reason why the object you drop from your hand falls to the floor, do not be deceived; that is not *why*, it is only *how*, and he knows no more of the *why* than you do.

It must be easy for you to see now how very important is physiology. It teaches us all that we know of the various processes essential to the maintenance of life and health—circulation, respiration, digestion and all the rest. If any of you finally conclude that it does not teach you enough, go right on with investigations in this line yourselves, and for



every new fact you may add, and for every new explanation of old facts, countless generations to come will rise up and call you blessed.

Many of the changes that occur in the body are not positively and simply vital in their character. The atoms that you take into your bodies through your stomachs and through your lungs are separated from their original combinations, and so thrown together anew as to form entirely different compounds. The study of all these substances and of all these changes comes under the domain of *chemistry*. The force that brings about these reactions may be a vital one, but the reactions themselves are, in many instances at least, capable of being exactly reproduced, and studied, entirely outside of the economy in a test-tube or flask of glass. The illness of many of our patients is due simply and solely to the lack or perversion of these chemical changes. Now, gentlemen, if you have not the whole story of these changes at your fingers' ends in the laboratory how can you expect to correctly diagnose or treat a case in which they are at fault in illness?

As I have previously said the study of the living body in health must be completed, and its structure and various functions thoroughly understood, before you can advantageously study disease. Therefore anatomy, physiology and chemistry are first taught you. And I earnestly urge you to become well grounded in each; for just in proportion as you do or do not, you will find all that follows easy and enchanting, or dull and difficult of comprehension.

Then follows the study of the various processes of disease, some of them only perversions of the normal processes and others entirely new ones. This is the domain of *pathology*. The two branches *medical* and *surgical*, are commonly taught separately and treated of separately in your text-books. This is all well enough, if you only bear in mind that the processes are in all essential particulars precisely the same in both and the apparent differences are due mainly to the surroundings. What you learn of surgical pathology can in a thousand ways be applied to medicine, and *vice-versa*. The whole scope of

this branch has undergone a complete revolution within the past few years, due to the discovery of the fact that a whole host of our most common diseases are due to the introduction into the system of microscopical organisms of various kinds. Advances are now being made so rapidly that text-books are out of date before there is time to bind them, and he who would strictly keep up with the most recent discoveries from month to month must really have a half-dozen languages at his command and access to a well furnished library of contemporaneous medical journals.

Having learned what is known of the structure and working of the body in health, and having studied the various processes of disease, you naturally come to the practical branches—those which teach the art of curing disease in individual cases. But first you must make a study of the means which experience has shown us are of value in producing the desired results—you must familiarize yourselves with the *materia medica*, and with *therapeutics* which teaches the art of using the means learned in *materia medica*. As this latter is rather an independent branch, and must necessarily precede *therapeutics*, it is with entire propriety assigned to the first year. Do not underrate its importance and do not neglect it because it may seem to you at the time dry and uninteresting. Again do not be content with simply being able to repeat what the text-books say about drugs, but make the personal acquaintance of each one of them; learn how it looks and smells and tastes; we all have much more confidence in, and make much more use of, our friends than of strangers of whom we have simply read. If, during one of your vacations, you can get an opportunity to spend a few months as clerk in a drug store you will never regret it.

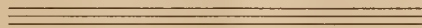
We presume that it will not need argument to convince you that the practical branches — *medicine*, *surgery* and *obstetrics*—are important. Your preliminary studies are pursued for the purpose of enabling you to grasp and apply these, and we are sure that you will not fail to do so.

Now, gentlemen, you have commenced the study of that

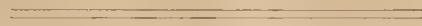


branch of the natural sciences which is by far the most abtruse, intricate, fascinating and noble; you have seen how many branches it has and how important each is in rounding out and completing the whole; eternal vigilance is the price of success; but the prize is within the grasp of each one of you; if only you are diligent and faithful the treasures you will gather will amply repay all your exertions.

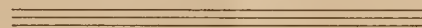
On the part of your faculty I take great pleasure in wishing each and every one of you a year in every respect most thoroughly satisfactory.



**The New York State Association of Railway Surgeons** will hold its second annual meeting at the Academy of Medicine, 17 West Forty-third street, New York, on Monday, November 14, 1892. The profession is cordially invited.



**American Public Health Association** will hold its twentieth annual meeting in the Salon de la Camara de Diputados, City of Mexico, Mexico, Tuesday, Wednesday, Thursday and Friday, November 29, 30, and December 1, 2, 1892.



**The Pan-American Medical Congress.**—The first meeting of this congress will be held at Washington, D. C., U. S. A. September 5, 6, 7, and 8, 1893.

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

---

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—NO. II. NOVEMBER, 1892.

\$1.00 A YEAR.

---

## **The Annual Meeting of the Medical Society of the County of Albany.**

At the annual meeting of the Medical Society of the County of Albany held October 12, 1892, the following new members were elected; Drs. J. C. Browne, R. H. Heenan, W. H. Conley, L. H. Newman and W. G. Lewi.

The treasurer, Dr. Hennessy, made his report for the year ending October 11, showing: Balance on hand at commencement of year, \$231.47: since received, \$121, making a total of \$352.47. From this were disbursed \$332.30, leaving a balance of \$20.17.

It was moved and carried as an amendment to the by-laws that the dates of the annual and semi-annual meetings be reversed.

President Henry Hun delivered his address, which will be published in the December number of the *Annals*.

The following officers were elected for the coming year: President, D. A. Bartlett; vice-president, W. B. Sabin, West Troy; treasurer, John V. Hennessey; secretary, J. L. Carroll; censors, Drs. Curtis, Hun, Mereness, Featherstonhaugh and Van Rensselaer; delegates to the state association, F. L. Classen, J. V. MacDonald, A. T. Van Vranken and T. F. C. Van Allen.



Dr. Bartlett, of the committee on hygiene, handed in his report. The substance of it was to the effect that the committee had lately considered a system of manual training adopted for the female pupils of the High school. The modus of this system was that each pupil for one hour in the day was at first given a piece of wood, about eight inches long and a knife, the handle of which had been properly constructed; and she was required to whittle this piece of wood into a required shape. When she became expert at this whittling, she was given a plane and a larger piece of wood, and she was required to plane this piece of wood into a shape agreeing with a model supplied her. After that the pupil was required to do some sawing according to model. The committee thought that the system was an excellent one, as it offered facilities for the development of all the muscles of the body, besides training the eye and the touch. Parents might say that the system was useless, as their daughters were never intended to be house carpenters, but the fact remained that the system was one of the best which could be adopted for the physical culture of their daughters. The only drawback to the system of physical culture resulted from the neglect of the pupils themselves to listen to the dictates of nature. They laced themselves tight and wore shoes with high heels, which threw the weight of the body on the arch of the foot and deformed it; but if these abuses were remedied, the committee thought that the system of manual exercise was as nearly perfect as modern science could bring it.

It was moved that the report be accepted and the motion was carried. It was then moved that the report be adopted, but this motion, being out of order, was lost, and a motion by Dr. Vander Veer that the report be made a subject of discussion at the next meeting of the society, was carried.

---

---

*To the Editor of the Albany Medical Annals:*

DEAR SIR—I respectfully but earnestly present for medical and public opinion (after mature consideration) the business as now carried on in this city of Albany the so-called carpet cleaning or

beating establishments. The city ordinances forbid any citizen to shake any carpet on his own premises, to wit: yard, housetop or roof. City authorities seem to not have considered that carpet shaking done in buildings within the city limits with windows wide open while being beaten, the dust is forced therefrom into the streets and houses, while God's pure air is vitiated and we good people are poisoned from inhaling the air impregnated, as it certainly often is, with scarlet fever, diphtheria and tubercular sputa, vermin and other poisons emanating therefrom. It is hoped that our Board of Health will take into consideration this matter and inquire and investigate so that at no distant day some plan may be devised for relief from this nuisance so detrimental and dangerous to the public health.

Yours respectfully,

H. S. CASE, M. D.

---

## Obituary Notes.

---

DR. JAMES F. MCKOWN died August 25, 1892, after an illness extending over two years. His ailment began with a hacking cough and developed into acute neuralgia. An examination by physicians developed that the lungs were not affected, and it was concluded that the disorders came from the nerves. Dr. McKown has visited various localities in the hope of receiving some benefit from climatic change, but to no avail. He returned to his home on Hamilton and Dove streets several weeks since, and gradually weakened until the end yesterday. Dr. McKown was born in Guilderland forty-eight years ago, his father being ex-Surrogate McKown. His medical education was obtained at the Albany Medical college. While Dr. McKown was of a retiring disposition, still he was ever ready to respond to an appeal for aid, and was genial and courteous. He was a member of Mount Vernon Lodge, No. 3, F. and A. M.

---

FRISBIE—In Vallejo, September 24, 1892, Levi C. Frisbie, a native of Albany, New York, aged 71 years, 5 months.

“No man in town could have been missed more than Dr. Frisbie,” were the words of second thought that leaped from lip to lip after the still more startling words, “Dr. Frisbie is dead,” had winged their rapid flight through every home and shop in the city.



For seven days Dr. Frisbie has been in his casket and that casket a vaulted shrine. The first paroxysms of grief and surprise alloyed with excitement have gone, the reaction has come to press home upon all the realization that the sad prophesy was true.

The old sign hangs in front of the office but the office chair is empty. A familiar form is missing from the street. The horse that learned so readily the homes of the sick stands unharnessed in the stall. The sick-bed visitor comes no more. In the bereaved home the sound of the husband's voice and tread have ceased to echo. His room is vacant. In the house, which for years has been his home, he lives only in the souvenirs and memories which with concerted and ceaseless voices call the dead back to the living, but his form is spirit. His lips are sealed and mute. The finger so often enthroned upon a fevered pulse is cold and callous to sense of touch and the heart that so often throbbed in sympathy for the afflicted has stopped beating and to all but memory he has gone. Thus in the places so long tenanted by the familiar spirit, the sympathizing physician, the fatherly adviser, and the patriotic citizen, only absence greets us.

The words are true. He is missed more than any man.

His death is hard to bear because it came so unexpectedly. It is the sudden bursting of the storm that wrenches the forest oaks severest. It is the sudden rushing of the waters that levels with the greatest force. It is the sudden apparition of death that shakes the deepest foundation of the soul. Had his friends been warned by weeks of illness they would have been fortified against the shock and it would have been to them less severe. It is true that his years admonished all that his sun had traversed the arc of a long life's day but all looked forward to a gradual sunset and an extended twilight. Yet God knew best and the orb of light and life dropped behind the western horizon and all was over. With one short step he had passed from the warm arms of the living who loved him to the cold embrace of death that summoned him.

He is missed more than any man because he was known better than any other man having been in Vallejo from the building of the first house. He and the town grew old together. His profession brought him into everybody's home and made him the friend and confidant of all. Being a physician schooled and experienced beyond the average of his fellows his practice was

accordingly large and as it reached across the lapse of forty years the ties and friendships formed were many and strong. Mothers whose advent into this world he attended called on him at their maternity. All who were born in Vallejo have had the doctor for a life-long friend. Is it any wonder, then, that the sudden breaking of these ties is severely felt?

His life was active and useful, always going he found no time to rest. In love with his profession and his patients he devoted to it and them the energy of his manhood years. And who can tell the good he has done, the suffering he has averted or the lives he has saved? Generous of soul he was the poor man's friend. Rich or poor, it made no difference, he responded to the calls of both alike and was always the sick man's sympathizer. Especially did the orphans at the Good Templar's Home receive much of his care and attention. They were the pampered idols of his benevolence.

He was an active, public-spirited citizen and gave his heart and hand to every public enterprise and has done much for the development of the town and its interests. He was a Baptist by faith and in his early life identified himself with that denomination joining the First Baptist church of San Francisco. He was a regular attendant upon church services whenever his duties permitted him. The Cornell Baptist church of this place bears his middle name which was his mother's maiden name in whose honor the church was named. He was a contributor to all denominations.

He had his faults which were more than foibles, and it would be foolishness and no honor to the dead to paint him spotless, but in charity we shroud his faults and with gratitude monument his virtues and to them point with pride and exhort young men to emulation of his noble traits.

In the last moments the doctor looked into the glass and saw himself dying and to the few surviving pioneers who came here with the Doctor, to the young and to all we say go look once and wisely into the same glass and you will see that you too are dying. Go forth, then, and prepare for that hour and live so that when it comes, whether it be suddenly or forewarned, it shall be said of you as it was said of Dr. Frisbie, by townsmen, by churchmen, by rich and poor, by old and young, "He is missed more than any other man."—W. L. GASTON, in *Vallejo Evening Chronicle*.



## ANNOTATIONS.

**The Treatment of Burns.**—Von Bardeleben (*Deutsche Medicinische Wochenschrift*) states that no specific for the relief of pain of burns has as yet been discovered. The author's present method of treatment is as follows:

After carefully cleaning the burned area, it is irrigated either with a three per cent. carbolic solution or a thirty per cent. salicylic acid solution. Sublimate lotions are avoided because of the great pain they produce.

After all the blebs are opened the entire surface is covered with powdered bismuth; over this cotton is applied. This absorbs any discharge, and fully protects the burned surface from the air. The cotton may be sprinkled with a powder composed of equal parts of bismuth and starch.

This dressing may be allowed to remain from one to three weeks, according to the case. In cases of burns about the face it is only necessary to cover the burned parts with the powder, the bandage being omitted because of the discomfort it occasions.

Under this treatment the author has seen children recover where two-thirds of the body were involved.

Von Bardeleben thinks that bismuth probably exerts some influence in preventing intestinal complications, as in one hundred cases treated in this manner only two had blood in their stools. In using the bismuth there is no danger of intoxication from absorption, even in cases where it is extensively applied. By the antiseptic treatment secretion is greatly diminished. *Therap. Gazette.*

**The Elimination of Creasote by the Urine.**—Imbert has found that creasote breaks up in the body and is eliminated in the urine as a guaiacol sulphate and a creasote-sulphate of potassium. When injected subcutaneously it is rapidly eliminated in the urine, and in large quantity. So far as the expectoration is concerned, it is eliminated very feebly, and it completely disappears from it before the kidneys have finished their work. He has also determined that the absorption from the rectum is active and rapid, but it makes only a very slight appearance in the expectoration for the first twelve hours after administration, and not at all afterward. By the kidneys, it is almost completely eliminated at the end of twelve hours. In comparing the amount eliminated by the

kidneys after subcutaneous injection and that after rectal injection, it does not appear that the former method presents any advantages; on the other hand, in the latter instance more creasote is excreted by the kidneys, and this method is certainly the more practical. However much of the material has been used, the elimination is practically at an end in twelve hours, therefore repeated doses are to be recommended instead of infrequent massive ones, but, however administered, the elimination by the lungs is very slight.—*Bulletin general de Therapeutique*.

**The Use of Salicylate of Soda for Sprains.**—M. Labbee, without claiming any priority, spoke briefly at a meeting of the Society de Therapeutique of the markedly satisfactory result which he had obtained by the use of one drachm of this remedy in twenty-four hours for a tibio-tarsal sprain. The following morning there was no pain, and in four days there was complete cure. His results were equally good in several cases, whether or not the rheumatic or arthritic diathesis was present.—*La Semaine Medicale*.

**Inoculation Against Cholera.**—Haffkine having found by recent experiments that anti-cholera vaccine prepared after Pfeffer's methods had the same action on various sorts of animals, ventured to try the inoculation on himself. He injected subcutaneously in his left side a larger dose than that used in animals, of the so-called first kind of anti-cholera vaccine. The indisposition which followed lasted twenty-four hours, and consisted of a rise of temperature of 1° C., with headache, dryness of the mouth, and clouding of the urine, with no disturbance of the digestive tract. Locally there was pain, slight swelling, and glandular enlargement. The pain lasted five days. The swelling gradually diminished and disappeared on the ninth day. Six days after the first inoculation, Haffkine had the other side inoculated with the strengthened cholera virus (vaccine No. 2). Again there was a rise of temperature and local pain, but no swelling. The general condition was normal in twenty-eight hours, and the pain disappeared in three days. There were no digestive disturbances. The inoculation was tried in three other persons with similar results. In one of these cases a slight diarrhœa which had lasted for several days stopped the day after the first injection. The inoculation of both kinds of anti-cholera vaccine, the protective



power of which in animals has been experimentally proved, is harmless to men, and Haffkine entertains the hope that six days after inoculation with this vaccine, the human organism will have obtained complete immunity against every cholera infection.—*The American Practitioner and News.*

**Protection of the Perineum.**—Dr. William S. Gardner, (*Journal of Gynæcology and Obstetrics*) writes that the value of a complete perineum is so great that the gynæcologist spends much time in inventing new methods for its repair. What he has to offer on this subject is only the method of applying the principle that time is the great perineal protector, bearing in mind that almost any perineum will distend sufficiently to allow the safe passage of the head, if only the head can be prevented from advancing with too great rapidity just during the last portion of the second stage of labor. The two great forces driving the child toward the outer world are the contractions of the abdominal muscles and uterine action. There comes a time in the labor when the perineum becomes so weakened by distention that it can no longer bear the great pressure of these combined forces, a time when a few minutes delay means the prevention of a rupture. Uterine action is beyond our control; the contraction of the abdominal muscles can be controlled either by complete anæsthesia or by the will of the patient. She is instructed in the interval between the pains that when she feels a pain coming on she is at once to open her mouth and breathe through it as rapidly as possible. In addition the head is held back by pressing against the perineum in the direction of the pubes. The perineum should be as carefully guarded during the passage of the shoulders as during the delivery of the head.—*The Medical and Surgical Record.*

**Cremation of Cholera Victims.**—The London correspondent of the *Sun* says that the agitation in England in favor of cremation in the case of all cholera victims is increasing. Sir Spencer Wells sent to the *Graphic* recently the results of some experiments which have a startling bearing upon this branch of the subject. He said that “some persons doubt whether poison can be carried through the earth for any considerable distance, but the fact has been experimentally proved as to saline solution. A salt of lithium was sown over a plot of land more than one hundred and fifty yards distance from a well, the water of which con-

tained no lithium. Repeated examinations were made, but it was only on the eighteenth day that it was proved that the solution had percolated through the soil into the well. Instances of contamination of water by animal impurities have long been too well known, and now the specific germs of infective diseases are known to propagate in the same way. In the botanic garden of Lyons flower-pots were filled with earth on June 16, 1891, and some earthworms were added in each pot with some of the sputa of tuberculous patients and fragments of lung from their dead bodies. A month afterward it was found that the earthworms contained tubercle bacilli in large numbers, and that guinea pigs inoculated with them soon died with general tuberculosis. Whatever the bacilli may be, whether tubercular, typhoid, or choleraic, in bodies buried in the earth it is incontestable that earthworms, everywhere so numerous and active, may preserve the bacilli in their bodies during many months, still living and losing none of their virulent properties and power of rapid germination or reproduction. These are the grounds on which we assert that bodies after death from cholera ought to be cremated, not buried."—*Medical Record*.

**The Water Supply of the Paris Suburbs.**—The first case of cholera, cholérine or cholera nostras which occurred in Paris this summer appeared in the Asylum of Nanterre. The water for this institution comes from Suresnes, on the Seine, a point at which the river has already received the contents of fifty-two sewers. A man described as a confirmed drunkard, had just been admitted when he was taken ill and died, apparently from cholera. The authorities were not able, or in any case failed, to obtain any information as to his antecedents. Nanterre is a prison and also a sort of asylum for vagabonds. When the epidemic assumed a serious aspect, the number of inmates was reduced from about 4,000 to 3,000. Soon other cases occurred in the neighboring districts of Suresnes, Puteaux and St. Denis. The Seine water from the Suresnes intake was found to contain, after filtration, 37,000 bacteria to the cubic centimeter, but the specific bacilli of cholera and of typhoid fever were not discovered. If the course of the Seine be followed to the water intake at Marly, which is close to St. Germain, it will be found that the river has received at this point the contents of 108 sewers, including the main drain and two-thirds of the Paris sewerage—*Medical Record*.



**A Corpse in a Medical College.**—A prominent lawyer of this city relates the following somewhat extraordinary story. He says: "I had a most extraordinary relation with General Harrison a good many years ago. I don't suppose a case of that kind ever happened before, or even will happen again, affecting a family of such distinction and involving two presidents of the United States. We have in Cincinnati medical colleges which utilize dead bodies for subjects for the use of medical classes. At North Bend or Cleves had died a young woman, and soon after her decease it was found that her grave had been rifled of her remains. Making further search it was found that the body of Benjamin Harrison's father was also missing. President Harrison's brother came down to Cincinnati, suspecting that these bodies had been sold to the medical college, and he got authority to examine the places of deposit of fresh subjects. At one of these colleges they had certain bodies put in a well, and there pickled, you may say, so as to have them in a state of preservation for the dissecting table. The president of the college was a well-meaning man, and he had not the least suspicion that anything would be found in the possession of his institution reflecting upon an historical and respectable family. But when they ran down a hook to bring up the successive corpses, the very first one that came up was venerable Mr. Harrison, father of Benjamin Harrison, also our president. It was certainly a dreadful sight for a son to see his father appear suddenly in that state. General Harrison came down from Indianapolis to Cincinnati. I believe that he would have killed the president of that institution if he could have found him at that time. He was inflamed, as he well might be at the indignity visited upon his beloved parent, one of the most inoffensive men in all that country, and a man of fair distinction too, who had been offered the lieutenant-governorship of Ohio, and sent to Congress. He turned about and came to our firm, and employed me and my partner to prosecute the college. Nothing could be done, however. In all respects of outrage it would look as if a crime had been committed, but in point of fact, nobody but the obscure perpetrator of the grave-robbing could be prosecuted. The body was returned to the tomb, and the family were left to let time heal their wounded feelings.—*Medical Record*.

**A New Method of Treating Acute Urethritis.**—Vaughan (*New York Medical Journal*, Vol. lv., No. 18) details the plan

which he has recently developed for treating acute urethritis. He includes all forms of acute inflammations of the interior urethra, whether specific or non-specific, as the same rule of treatment applies to all.

At the suggestion of Dr. Powers, the author began the use of dermatol in these cases. Preparations holding this substance in suspension were used with negative results. The mucilaginous principle extracted from Irish moss and from Iceland moss, combined with benzoin and glycerine (known as plasment) was found to be a very satisfactory basis for the application of dermatol to the urethra. The strength advised is from three to five per cent.

The method of applying this is as follows: The patient is requested to urinate, after which a soft rubber catheter about five inches long and with numerous openings near the end on all sides is passed and the urethra irrigated with warm water, or with warm chloride of sodium solution, one drachm to the pint of water. Without removing the catheter about half a drachm of the dermatol plasment is injected, either from a hard rubber syringe or a compressible tube fitted with a hard rubber tip, the catheter being gradually withdrawn during this injection. Absorbent cotton is applied over the meatus, and changed as often as necessary. Thorough antisepsis of instruments and hands is urged.

A long list of cases is tabulated, showing the result of this treatment. The author concludes from his studies: 1. That in the treatment of acute urethritis, soothing applications rather than irritants should be used. 2. That the passage of the soft rubber catheter recommended does not, as a rule, irritate the urethra; that if it does it should not be used. 3. That plasment is an excellent vehicle for urethral medicaments. 4. That dermatol in plasment is the most efficacious drug he has used in urethritis, although he has used no other drug in plasment. 5. That treatment by the above-described method has produced a milder course and fewer complications than that with other remedies he had used.

Powers says that dermatol in uniform admixture with gelatin stopped the growth of the anthrax of typhoid fever, and that of pneumonia.

(My own experience has led me to believe that methods of treatment which involve the passage of any instrument, even a soft rubber catheter, into the urethra during the acute stages of inflammation are useless or worse than useless. Dr. Vaughan's results



would seem, however, to show that whatever pain or annoyance it may have caused the patient, it did not interfere with the process of cure. J. W. W.)—*The Am. J. Med. S.*

**Bacteria in Bottled Water.**—By A. A. Ghriskey, M. D. At the suggestion of Dr. Billings, Director of the Laboratory, an examination has been made of certain so-called table-waters which are largely sold in bottles and in casks throughout the country, with reference of the micro-organisms that they contain. Various brands are being examined, but the results obtained in the case of one of these waters, known as Poland water, seem worthy of publication at the present time, as they indicate a possible source of contamination of such water after it comes into the hands of the retail dealer.

The samples of Poland water examined came from different druggists. In three bottles, which according to the labels had been filled and corked directly at the spring, the number of bacteria found was 300 to the cubic centimeter, which is not a larger number than good potable water usually contains. These organisms were of two kinds; one, a mould, not identified; the other a motile bacillus resembling in some respects the typhoid-bacillus of Eberth, but readily differentiated from it by culture-methods.

In two samples of the same water that had been obtained from the spring in large vessels and transferred to soda-water tanks, in order that the water might be sold by the glass from the fountain, there had been contamination. One of these contained 6,000 and the other 7,000 bacteria to the cubic centimeter; and in the flocculent sediment in the eight-ounce bottles in which the specimens were obtained, were found various forms of ameba, of flagellate protozoa, of radiolaria, and of one form of algæ.

It would seem probable, therefore, that this water had been mixed with some less pure water in its transfer to the tanks from which it was drawn for sale; but it is very possible that this may have resulted, not from a deliberate mixture, but from washing out the tanks with an impure water.

In these days of general doubt and suspicion of water-supplies, it is desirable that the man who buys a bottled water, in order to avoid possible risks of typhoid or of cholera, should be able to have some assurance that he is really getting what he supposes he is paying for.

A bacteriologic examination of any water is only trustworthy

when it is made at the source; or with special precautions as to sterilized vessels, cold storage, etc., if the water is to be carried for some distance before examination, because the bacteria multiply rapidly at first in the bottled water and then largely die out, leaving, however, their products behind them.

Bacteria in bottled or cask waters are not necessarily derived from the spring itself. They may be introduced in the progress of cleaning the vessels or from the persons of those engaged in filling them; and hence a very serious responsibility rests upon those who furnish such waters from the spring and still more upon those who handle it for sale in such a way as to mix with it even a few drops of other water.—*Medical News*.

**Europhen and Europhen-Aristol.**—Dr. John V. Shoemaker, has lately concluded an exhaustive study of europhen, with a view to aid in deciding its place in surgical therapeutics. The writer gives a careful review of the work of other observers in this direction, and largely coincides in their conclusions concerning the efficacy of this new remedy. At the same time he gives in detail the results of his own clinical tests with europhen. These include certain variations in the method of treatment and involve special therapeutic points which must be regarded as new and important contributions to our knowledge of this medicament.

In the following brief abstract we are unable to present more than an imperfect statement of some of the more salient points in Professor Shoemaker's clinical experience with europhen and europhen-aristol. For the complete article the practitioner is referred to the original article in the *Journal of the American Medical Association*, Aug. 6, 1892.

The writer found europhen to be of value in incised, contused and lacerated wounds, the surface being maintained in a dry and aseptic condition by the simple application of the adherent europhen powder. In ulcerations the same excellent effects were observed.

In case I, the europhen treatment was applied to a chronic, unhealthy leg ulcer in an old man. The edges were callous and the lesion was surrounded by a zone of lividity. Many remedies had been used with little or no effect. First cleansing the surface with a weak lukewarm solution of carbolic acid, the writer applied europhen-aristol in powder, covered it with borated absorbent cotton, and a bandage to the knee. "A highly gratifying effect"



[says the writer], "was produced. Within ten days the character of the sore was completely changed. Healthy granulations made their appearance; a course of repair was inaugurated which proceeded steadily, and at the end of four weeks, the surface was soundly cicatrized."

Case II. Girl, aet. 19; scrofulous ulcer of the neck, on the opposite side a cicatrix indicated a former ulceration. The ulcer was treated with euophen powder and borated cotton. Suppuration soon diminished; grayish exudation disappeared; granulations became healthy and in three weeks the patient was discharged healed.

Case III. A woman, aet. 26; chronic lupus vulgaris with nodules and ulcers. Had been treated by many physicians and by almost every known method. Twice or thrice daily, euophen was freely dusted over the ulcerated surface, which was daily irrigated with carbolic solution. Amendment was manifest at the end of the week; in three months she was discharged cured. In another case of still greater chronicity and obstinacy, an equally favorable result was obtained.

Case IV. A man, aet. 68; chronic ulcer in the right thigh with the character of a superficial epithelionia. Curetting and cauterizing of no avail; euophen powder applied without much improvement. Then a preparation of 3 oz. to 4 oz. of euophen to 1 dr. of fat was employed. The pain subsided; healthy granulations appeared, and in about four months the ulcer was healed.

Case V. A woman, aet. 50; epithelial ulcer on the left ala of the nose, deep red color; raw but dry, surface, and hardened edges. Aristol was used to some advantage but the ulcer remained open and irritable. Euophen gave about the same result. The two remedies were then used alternately for some weeks but still the condition remained comparatively unchanged. Finally the mixture of equal parts of euophen and aristol was used, when the ulcer began to gradually but steadily heal from the bottom, and in about ten weeks a well-marked cicatrix had formed.

Case VI. Sycosis of upper lip, which was red, hot, swollen and surmounted by papules, pustules, scales and crusts. I removed the crusts with oil of ergot; washed the part with a weak lotion of hamamelis, and applied a ten per cent. ointment of euophen. This was used several times, daily, and effected a complete cure.

Case VII. I found that in several cases of carbuncle, after the

necrosed tissue had been expelled, euophen powder aids the work of repair. Euophen-aristol gave the same good results.

Case VIII. A man, aet. 18; papular acne of face and back, interspersed with comedones. External remedies had thus far failed. A suitable diet and the use of euophen ointment (1 oz. to 2 oz. to 1 oz., excipient) effected a cure.

Case IX. Middle aged woman, typical example of second stage of rosacea; cure effected by a lotion of euophen, glycerine, and aq. sp. odorat.

In several cases of erysipelas, cure followed the use of euophen ointment ten to twenty grains to the ounce. In the dermatitis of rhus poisoning, also the remedy was effective. In herpes pro-genitalis, herpes zoster, and seborrhœa oleosa euophen in powder gave the best results.

The author derived excellent effects from the use of euophen in eczema. An obstinate case of eczema of the hands and feet [Case XI.] was promptly cured by euophen-aristol. Case XII refers to a psoriasis of many years standing in which euophen-aristol was used. Dr. Shoemaker states that he had already found aristol useful in this condition, but the euophen-aristol produced a more rapid and decided effect. In the lesions of syphilis he found both euophen and its compound valuable. The author highly commends euophen as a dressing which is harmless and agreeable to use, and as such is well adapted to gynecological practice and the diseases of children. He thought that the mixture of euophen and aristol added to the efficacy of each. Euophen in powder acts more effectively in some cases than euophen in ointment. The strength of ointments may be increased or diminished according to the needs of the case. In the experience of the author, the proportion of one drachm of euophen to the ounce of fat makes an efficacious ointment.

---

## REVIEWS AND BOOK NOTICES.

**A Treatise on Diseases of the Nose and Throat.** In two volumes. By Francke Huntington Bosworth, A. M., M. D., professor of diseases of the throat in the Bellevue Hospital Medical College, New York; consulting laryngologist to the Presbyterian Hospital; consulting physician to the O. D. P. of the Bellevue Hospital; fellow of the American Laryngological Association, of the American Climatological Associa-



tion, of New York Academy of Medicine; member of the New York Laryngological Society, of the Medical Society of the County of New York., etc., etc.

Volume Two Diseases of the Throat; with three colored plates and 125 woodcuts. New York, William Wood & Co., Publishers, 1892.

The second volume of Dr. Bosworth's exhaustive work on Diseases of the Nose and Throat fulfills the expectations of those who have studied the first volume, which was devoted to the nose.

The second volume treats of the throat, its diseases, and also the surgical procedures resorted to for obtaining access to the ora-pharynx and larynx. There is found the same careful, conscientious pains in the elaboration of this volume as was noted in the first.

The discussion of doubtful points is skillfully and fairly handled, while the presentation of the well recognized facts and diseases is set forth in an attractive and logical form.

Opening at whatever part of the book we may, we find evidences of extensive general reading, careful thought, and accurate reasoning.

It will undoubtedly be accepted as a standard in all English-speaking countries.

The book is well illustrated and printed and is bound in the usual good taste of the publishers.

**The Principles and Practice of Bandaging.** By Gwilym G. Davis, M. D., Universities of Pennsylvania and Gottingen. Member of the Royal College of Surgeons, England; Assistant Demonstrator of Surgery, University of Pennsylvania; Surgeon to the out-patient department of the Episcopal and Children's Hospitals; Assistant Surgeon to the Orthopædic Hospital. George S. Davis, Detroit, Mich., 1891.

This volume is a business-like, straightforward exposition of the art of bandaging. The directions are clear, and the description of each application of a bandage to the various parts of the body is illustrated with simple, easily understood, and well engraved plates.

The type is clear and the paper and general appearance of the book excellent, but the price, three dollars, for a book of sixty pages, although profusely illustrated, seems excessive.

## PAMPHLETS RECEIVED.

The editor acknowledges with thanks the following pamphlets received:

A Voice From the South. To the Medical Profession.

The Effect of Diseases of the Eye Upon the General Condition. By William Cheatham, M. D.

Chloralamid: The Treatment of Insomnia. By Joseph Collins, M. D., New York. Concerning the Employment of Light in the Treatment of Diseases. By Will F. Arnold, M. D.

Annual Lectures Delivered before the Alumni Association of the College of Physicians and Surgeons of Baltimore. By Dr. W. E. B. Davis.

Early Symptoms of Hip Disease and Aetiology of Hip Disease. Treatment of Abscess in Hip Disease. By H. Augustus Wilson, M. D.

Pneumonia in Boston during the Recent Epidemic of Influenza. By George B. Shattuck, M. D.

Wintering in Egypt. By Frederick Peterson, M. D.

A Review of Ideality of Medical Science. By Maurice J. Burstein, A. M., M. D.

Excision of Tubercular Knee Joint. A Case of Incipient Hip-Joint Disease. By H. Augustus Wilson, M. D.

Consumption at Health Resorts. By Walter F. Chappell M. D., M. R. C. S., Eng.

Hints on Coughs, their Causes and Treatment. By Walter F. Chappell, M. D., Eng.

Salophen in Acute Rheumatism. By William H. Flint, M. D.

Retroanterograde Amnesia, with Report of two Cases. By J. T. Eskridge, M. D.

Addresses and Essays. By G. Frank Lydston, M. D.

A Successful Case of Caesarean Section. By T. Gaillard Thomas, M. D.

What is Eclecticism? By A. J. Collins, M. D.

The Essential Differences between the Three Schools of Medicine. By John M. Scudder, M. D.

Transactions of the Medical Society of the State of New York. Published by the Society.



# THE Albany Medical Annals

---

VOL. XIII.

DECEMBER, 1892.

NO. 12.

---

## **ACTION OF DEAD TUBERCLE BACILLI AND OF TUBERCULIN UPON THE ANIMAL ORGANISM.\***

BY WILLIAM VISSMAN, M. D., LOUISVILLE, KY.

(TRANSLATED BY HENRY T. BROOKS, M. D.)

That dead tubercle bacilli are capable of acting upon the animal organism, was first shown by Koch,\*\* who noted the occurrence of aseptic suppuration after injections into the subcutaneous connective tissue. Further and more extensive testimony of their action is given by Prudden and Hodenpyle,\*\*\* who made intravenous injections and observed quite different and specific changes, at first in the lungs and later also in the liver.

As early as the fifteenth day after inoculation, formations resembling tubercle were perceptible in the lungs, which up to the third week constituted the only demonstrable alteration. From the third to the fifth week onward, the same forms made their appearance in the liver, seldom in the spleen, while all other organs were always found to be normal. Here it is especially to be emphasized, that these nodules never underwent caseation.

In order to study the origin of miliary and submiliary tubercle, and to test the accuracy of the work of Prudden and Hodenpyle, a number of different experiments were carried out, the results of which shall be made known in what follows.

---

\*Inaug.—Dissert. Berlin, 1892. See also Virch. Archiv. Band 129, 1892. Semaine Médicale, June, 1892, No. 29. Verhandlung, der Berlin, Med. Gesell. 1892.

\*\*Deutsch Med. Woch. No. 8, 1891.

\*\*\*N. Y. Med. Jour. June, 1891.

A pure culture of tubercle bacilli was first boiled in distilled water in a test tube for five minutes: the next day, after the water had been renewed, heated at 100° C. for 2¼ hours in a Koch's steaming apparatus. After cooling, the colonies were triturated with the remaining water, forming a milky suspension which was used as inoculation material.

The injections were made into the aural veins of rabbits, though in some of the experiment animals the vessel was not entered, a part of the material injected escaping into the subcutaneous tissue, and in this case abscesses invariably formed. Experiments to produce cultures upon glycerine agar and gelatine, resulted negatively: likewise, small quantities of the purulent matter when introduced into the subcutaneous tissue, caused only a reddening of the skin which, with the pus itself, gradually subsided. Morbid changes in the structure of the internal organs were not manifest at the autopsy.

The post mortem changes in all intravenous inoculated animals were the same.

After about five weeks the following conditions presented:

Both lungs very pale and freely movable. A few hepatized lobuli and numerous poppy seed sized grayish-white nodules could be seen.

The pale, grayish-red spleen was not enlarged and showed nothing abnormal; the liver, on the other hand, was much increased in size, dark-brownish-red in color and contained numbers of yellowish-white foci.

Macroscopically the kidneys presented no alteration.

In the acini and principally in the vascular sheathes of the liver, numerous small, round and irregularly formed foci, invisible to the naked eye, showed themselves. These foci had a somewhat condensed center, in which an occasional giant cell and numerous epithelioid cells,—i. e., cells, with large, clear, round nuclei and a slightly granular cell body—having sometimes pointed, sometimes blunt prolongations, were to be seen. At the periphery of these foci were arranged large numbers of round cells of varying size, some being larger, others smaller than colorless blood corpuscles. Viewed



collectively these cells very much resembled leucocytes. Tubercle bacilli could but seldom be demonstrated in the sections, and when this was the case only as scanty remnants. In many instances rosary-like forms were to be seen; also here and there bacilli whose poles stained, while their central segment remained uncolored; and sometimes small colored particles, the size of individual sections of the rosary forms, were strewn over the preparation. Whether the latter were granules of the coloring matter used or not must remain undecided, although it is probable they may be remnants of former tubercle bacilli.

In many places the vascular sheathes were strongly infiltrated with large and small round and spindle cells; in this position also were cells with large nuclei, and slightly granular protoplasm, having more or less pointed or blunt prolongations. The walls of the arteria hepatica were infiltrated with numerous round cells.

The gray nodules already mentioned as occurring in the lungs, presented essentially the same microscopical structure as those found in the liver, the only variations existing being the presence of a larger number of round cells, especially in the center of the new formation.

Besides this condition microscopical examination of sections of the lung showed the perivascular and peribronchial connective tissue to be greatly hypertrophied and infiltrated with round, asteroid and spindle cells. The lumen of the bronchi in different places appeared to be encroached upon. The arterial walls were greatly thickened and infiltrated with round cells; the individual layers could no longer be distinguished, the media and adventitia especially appearing to be blended. The latter also seemed continuous with the surrounding connective tissue. Through this thickening of the walls, and perhaps also through the hypertrophy of the perivascular connective tissue, the lumen of the vessels was very much reduced, often almost occluded.

Besides the changes already described, other quite severe alterations are to be found in the parenchyma of the lung. In certain localities the alveolar walls had partially disappeared, so that a number of alveoli united to form one cavity. At other points the walls of the alveoli were much thickened and infiltrated with numerous round and spindle cells, whereby the lumina of the alveoli were greatly narrowed and here and there totally obliterated. The picture resulting from this was not unlike that to be seen in sections of glands. The epithelia of the alveoli appeared densely packed together and surrounded by fibrous tissue. Occasionally in atelectatic parts no alveolar walls could be recognized in an area occupied by a whole lobule. Such a portion of the lung tissue looked as though composed only of small and large round, stellate and spindle cells. The two latter varieties of cells possessed both long and short prolongations.

The pleura over these areas was not altered.

The examination of microscopical preparations of the kidney disclosed no nodules as seen in the lung and liver, though there were numerous small hemorrhages into many glomeruli and into the interstitial tissue. The vessel walls showed little alteration, in their periphery were collected a few round cells.\*

In the later stages of the process it is no longer possible to find either tubercle bacilli or remnants of them in the tissues. The cellular elements gradually disappear from the nodules and pass over into fibrous tissue.

The spleen, during the course of the process, showed no essential change.

In order to become thoroughly acquainted with the origin of the different alterations, and to determine whether these are called forth through the irritation of the tubercle bacilli as foreign bodies, or through the action of the albuminate contained in them, a series of experiments was carried out in the following manner.

---

\*A complete account of the post mortem findings will be found in my Inang. Dissert. Berlin, May 1892.



According to Buchner\* the albuminates of sterilized pneumo-bacilli lose their pyogenic action, if they are brought into union with basic anilin coloring matters. This fact was made use of in the following experiment. It was to be expected on the one hand, that stained bacilli injected into the tissues would be easily found in the latter, but on the other it was to be determined whether Buchner's statement could be accepted for the tubercle bacillus.

A pure culture of tubercle bacilli was treated in the following manner:—The bacilli cultures were lifted from their nutrient medium with a platinum needle, transferred to a test tube containing a strong watery solution of fuchsin, and then heated at 100° C. for two hours in a Koch steaming apparatus; they were then poured upon a filter and washed with distilled water until no more color came away. The filtrate was again placed in a test tube and mixed with distilled water. The dark rose colored suspension thus obtained, remained standing over night and on the following morning was placed for two hours in the steaming apparatus. After cooling this fluid was used for injecting.

The autopsies in all of the animals inoculated with this suspension gave, seven weeks after injection, the same results as those obtained in animals treated with uncolored dead bacilli

Another series of animals was inoculated with a suspension prepared in the following manner:

The condensation fluid of two glycerine agar cultures of tubercle bacilli was poured into a test tube and the colonies transferred to it by means of a sterilized platinum needle. The tube was then plugged with cotton wool and placed in a Koch steaming apparatus, where it was exposed to a temperature of 100° C. for fifty hours. After cooling, the contents of the glass were stirred with a sterile platinum needle and the larger particles finely divided. Of the milky suspension thus obtained two rabbits received each 0.5 g. in the aural vein:

---

\*Berlin, Klin. Woch. No. 30, 1890.

the remainder of the fluid was the next day poured upon a filter and washed a number of times with boiling, distilled water, and again placed in a test tube. The mass was then boiled with water for about five minutes, and the suspension used for intravenous injection.

The examination of the internal organs at an autopsy held two weeks after innoculation, showed no deviation from the changes previously mentioned.

As all the cases examined showed the nodules which the sterilized tubercle bacilli are capable of producing, to be of the same structure as fresh tubercle, with the single difference, that those caused by the living bacilli after a certain time begin to undergo caseation at the center, it seemed probable that this caseation was dependent upon the products of the growth of the bacilli.

In order to obtain knowledge on this point, a number of animals which had already been innoculated with dead bacilli, were treated with the Koch tuberculin, the number and intervals of the injections varying, and the extreme quantity used being 0.04 daily. Under this treatment none of the animals lost flesh, nor was their growth interfered with. The changes in the organs differed only from those found in previously examined animals in a slight swelling of the spleen, dependent upon an hyperplasia of the follicles. Caseation or fatty metamorphosis in the new formations caused by the dead bacilli, could no more be determined in these animals than in those not receiving tuberculin.

From these experiments may be drawn the conclusion, that dead tubercle bacilli act upon the animal organism as a strongly irritating body. Injected subcutaneously they cause abscess by virtue of their chemotactic qualities. On the other hand, brought into the circulation they exert at first a strongly irritating action upon the connective tissue elements, not alone of the walls of the alveoli but also of the vascular walls (*art. pulm.*). At a later period the same influences show themselves also in the connective tissue of the liver, although not to such a high degree; the action upon the kidneys is



weaker, and in the spleen no alterations could be traced. If, in addition, an animal is treated with tuberculin an hyperplasia of the spleen follicles is added.

The changes in the lungs and liver, called forth in the first few weeks through the irritation of the dead tubercle bacilli, possess so great a resemblance to young tubercles, that it is impossible to distinguish one from the other. It is these nodules, composed of large and small epithelioid and round cells, between which here and there a giant cell lies. Tubercle bacilli are still to be seen in this stage; they lie mostly between, but sometimes also within the cells. These nodules differ only from true tubercle in that they show no disposition in later stages to proceed to central caseation, the cellular elements being replaced by fibrous tissue.

As tubercle bacilli, though dead and therefore deprived of the power of growth and metabolism, can still originate alterations in the tissues resembling in every detail the structure of a fresh tubercle, and as further, the elements of these nodules are transformed in their later stages into fibrous tissue, we may assume with Virchow,\* that a tubercle is a new formation which starts from connective tissue. This new formation originates through proliferation of the connective tissue elements induced by the tubercle bacilli acting as an irritating, foreign body; the long action of the toxic products of the metabolism of the bacilli kills the young cells, whereby caseation is produced.

We have seen in the descriptions of the autopsies that the bacilli gradually disappear from the nodules, but that as long as remnants of them are still present the round cells take a prominent part in the formation of the structure. From this it appears very probable that the irritation is of a chemical nature, and further that the irritant must be in the bodies of the bacilli themselves and is only set free on their disintegration, then the connective tissue elements begin to proliferate; through the chemical influence cells form which are amoeboid in character, such as have been observed by

---

\*Cellularpathologie, IV Auf. S. 360.

Virchow.\*\* Through the chemotactic qualities of the disintegration products these cells collect in larger or smaller numbers.

As the vascular walls are exposed to the same irritation as the remaining tissues, an increase of the connective tissue elements also occurs here, and there presents in many places the same condition which Heubner\*\*\* has described as distinctive of arteritis syphilitica.

---

---

## The Objects and Functions of a County Medical Society:

BEING THE PRESIDENT'S ADDRESS DELIVERED BEFORE THE  
ALBANY COUNTY MEDICAL SOCIETY OCTOBER, 1892, BY  
HENRY HUN, M. D.

It is certainly more appropriate to select as the subject of the "President's address" some topic directly related to the working of the society rather than one of scientific or practical medicine which can be better presented and discussed at an intervening meeting. In the light of the history of this society during the ten years that I have been a member of it, no subject seems to me so timely as a brief statement of the "Objects and Functions of a County Medical Society" in general and of this society in especial, and of the benefits to be derived from participation in its meetings.

Were it not that a majority of the members are habitually absent from the meetings, it would hardly seem necessary to state to medical men the advantages which they might, but do not, obtain from their membership in a medical society. Whenever a number of men find themselves partially separated from the rest of mankind by reason of their all doing the same kind of work, they, without much delay, certainly of late years, form themselves into a society whose membership shall include these special workers and exclude all others. Men engaged in manual labor have their trade unions and labor

---

\*\*Ibid. S. 360.

\*\*\*Die luetische Erkrankung der Hirnarterien, Leipzig, 1874.



organizations, the clergy have their clerical clubs, the lawyers have their bar associations, and the doctors have their medical societies which are so numerous that their very number implies how needful and desirable they are. We have only to remember the "guilds" in the middle ages and the "labor organizations" in recent times, to realize what great power such bodies may wield.

There are two great objects to which the power that such a society possesses is directed:

1st. The protection of its members from injury and injustice, under which may be included a constant struggle to obtain higher wages, and,

2d. The improvement of its members in the theory and practice of their profession or craft.

These two objects of their existence assume a relatively very different importance in different societies. Sometimes the whole aim of an association is to secure for its members better pay for their work, which usually involves the attempt to secure the same pay for the services of each member without regard to his knowledge or ability. Thus it has often been attempted by medical societies to establish a uniform tariff of charges, assuming that the training and the ability of each member were exactly the same, and by means of a "black list" to compel patients to pay their doctor's bills. Both these things were done by this society in 1849 and 1853, but were soon abandoned as impracticable. Societies, whether medical or otherwise, which exist only to accomplish this first object and seek only to obtain pecuniary advantage for their members, probably do more harm than good.

On the other hand, societies the main object of which is the improvement of their members in the knowledge of their profession or life's work, can hardly fail to do good and can certainly do no great harm. Such is the object of the great majority of medical societies, and their very number shows how essential they are to the medical profession. Indeed it is hard to overestimate the value to its members of a properly conducted medical society. The art of the practice of medi-

cine and the sciences on which it rests are changing so rapidly that not even the best educated physician can rest content throughout his life with the knowledge obtained in his medical school and can cease to study after graduation. Every physician admits this and subscribes to one or more medical journals and reads a new medical book occasionally. If he does merely this he need not hope to keep abreast of the times but will soon fall hopelessly behind. Indeed, all will admit that besides the reading of medical journals, a physician must carefully study his own cases. The mere "reading up" in a desultory manner some special form of disease, even in connection with a case then under observation, although admirable as far as it goes, yields a knowledge which is usually in great part soon forgotten. By far the most satisfactory method of acquiring a knowledge of any disease is to prepare on it a paper based on wide reading and on one or more cases of the disease that have been under careful personal observation. Anyone who does this faithfully cannot fail to be surprised by how little he knew of the subject at the outset and by how much knowledge he acquires during the course of his investigations. Moreover such a paper being a condensation of much reading and thought, cannot fail to be of value to the auditors if they try to make it so. As an incentive to the preparation of such papers an active medical society is of great value and cannot be fully replaced by a medical journal.

Again the reading of medical journals often leads to very erroneous conclusions. An enthusiast hastens to publish a few ill considered observations and as the result of them strongly urges the employment of some drug or some mode of procedure more or less new. I think that I am safe in saying that the greater part of the space in our medical journals is filled with just such ill considered observations which will not stand the test of ten years' time, while the number of new drugs and of new combinations of drugs recommended each year is enormous. With the best will in the world one man's lifetime would not suffice to satisfactorily test a small fraction of them.



But, as chance will have it, one man will be led to try one new drug, another another; so that a discussion in the society on the merits of some new drug will often save the members an expenditure of much time. Nowhere can one so easily and quickly form an opinion as to the merits of the constant additions to the pharmacopœia as in a properly conducted medical society.

Finally, as a means of bringing about and maintaining a good feeling towards, and a correct estimate of the ability of other practitioners, a medical society may serve a very useful purpose. We all not infrequently hear from patients very distorted accounts of the sayings and doings of other practitioners and we often see cases in an advanced stage of a disease when diagnosis is really very easy that we think should have been recognized by other physicians earlier, and finally we sometimes hear criticisms of ourselves put in the mouths of physicians who either never said them or said them in an entirely different spirit from that in which they are reported. From these causes there is gradually built up in us on very uncertain foundations a distrust of and contempt for many of our fellow practitioners. If in a medical society we hear one of these same physicians read a paper we can form a truer estimate of his ability and if in the course of a discussion he opens our eyes to an error, in which we believed, our contempt for him disappears. Doctors cannot set themselves right with each other by free and open discussion, as lawyers do in court, or clergymen in the pulpit, or literary men in print. The nearest approach which they can have to such a discussion before a wide tribunal is in a medical society, and surely if it were only for the promotion of good fellowship among doctors, a medical society would be worthy of cordial support.

Of course it is undoubtedly true that after a hard day's work it is more comfortable to remain at home or give one self up to enjoyment rather than prepare a paper for or attend a meeting of the society. A busy practitioner in full practice may think himself excusable if he does nothing else but at-

tend to his practice and gives up the study of scientific medicine. But he cannot very well do this. If he attempts it he will steadily become a less and less competent physician, he will find that his practice is dwindling and that his patients are going to other and better informed physicians. As a matter of fact we do not find in any community that the doctors with the largest practice are those that conspicuously neglect attendance on medical societies. Certainly we younger members who are not excessively driven by a large practice have no excuse for neglecting the society and following a course which will never lead to any real success in our profession. I would strongly urge the younger members to make such contributions as they can and not be in the least deterred by the fear that these contributions may not prove of interest to the other members. If they will do so I can assure them even out of my own very limited experience that they will be rewarded for their labor a thousandfold. It is the easiest, and I believe the only way, to attain real and lasting success in our profession.

Thus far I have considered the uses and advantages of medical societies in general. The same remarks apply to county and state medical societies with this one exception, that these societies stand in a certain sense as representative bodies of the medical profession and hence office in them becomes of value for advertising and other purposes. Many physicians, who are more anxious to have than to deserve honor and who can find no other path to eminence, desire before they die to become president of their county society. To accomplish this they resort to all methods of political intrigue. In consequence of this we occasionally see elected to the presidency men who have begged the favor of a vote from everyone's hand, who have no interest in the society beyond their own election, and who are not sufficiently in touch with medical work and medical thought to guide the society into any profitable line of work. Naturally under such management the society deteriorates and holds only a few irregular, uninteresting meetings. But even in spite of incompetent



officers the society would thrive if the members were interested in its success, and I beg you all to-night, for your own sakes as well as for that of the society, to devote your best energies to its meetings during the coming year.

During the past year seventeen meetings have been held, at which twenty-four papers were read and thirty-eight short summaries of topics to open discussions were prepared. These papers and discussions I think I can honestly say were practical and good. Of the attendance at all the meetings, except the first three, the less that is said the better. Twice we have been called together to mourn the death of a member. First for Dr. Steenberg, a man ripe in years and in the honors and rewards of a long and useful professional life. Then for Dr. Fleischman, whose brilliant mind and untiring industry gave promise of such an eminent professional career as can only be obtained by a chosen few. Death seems doubly cruel when it steps in at the very outset of such a professional life and prevents the fulfillment of such bright and well founded hopes.

It has been the custom of the retiring president to make some suggestion to the society, based on his year's experience in office. In conformity with this custom I would suggest an amendment to our By-laws to the effect that no one shall be eligible for election as delegate to the State Medical Society who has not previously read three papers before this county society. This would be a strong inducement for our members to take part in the proceedings of this society and would result in our sending to the state society delegates who would be likely to take part in the proceedings of that society.

I cannot conclude without thanking the members for their kindness in electing me president, for the courtesy with which they have treated me, and for the aid which they have given me in making the meetings attractive.

## **The Treatment and Management of Asthma.\***

BY THOMAS J. MAYS, M. D., PROFESSOR OF DISEASES OF THE CHEST IN THE PHILADELPHIA POLYCLINIC, AND VISITING PHYSICIAN TO THE RUSH HOSPITAL FOR CONSUMPTION, OF PHILADELPHIA.

---

Asthma is a paroxysmal disease of the pneumogastric nerves which throws the muscular fibres of the bronchial tubes into spasmodic contraction. Its prominent symptoms are itching of the head and neck, oppression and tightness of the chest, dyspnoea, bloating of the abdomen, pain in the region of the diaphragm, cough, expectoration and fever. Its causes are predisposing and exciting. (1) It may be inherited as asthma, and it may appear in children who come from consumptive or nervous families. It seems as if there is a predisposition necessary before the disease can develop. (2) Among the exciting causes are the inhalation of dust, powdered ipecacuanha, pollen of grasses and of roses, odors of certain animals, as cats, sheep, etc. Reflex excitation coming from the nose, stomach, liver, intestines, uterus, etc. Its relation to hay fever is very close. Practically there is no difference between the two. I find that that which relieves the one will also relieve the other.

Its treatment resolves itself into that (1) which aims to give immediate relief from the paroxysm and (2) that which aims to prevent a recurrence of the paroxysm.

Those remedies which relieve the paroxysms may be classified as follows: (1) central narcotics, consisting of morphine, belladonna, stramonium, hyoscyamus, tobacco, chloroform, ether, ethyl bromide, etc.; (2) emetics, consisting of lobelia, ipecacuanha, sanguinaria, etc., and (3) the peripheral narcotics or relaxants, consisting of nitro-glycerine, amyl nitrite, sodium nitrite, pilocarpine, etc. Now all our more or less powerful therapeutic agents are stimulants to the general or special

---

\*An abstract of a lecture delivered to the class in the Philadelphia Polyclinic, November, 1892.



bodily tissues which they affect in small doses, while in large doses they paralyze the same. All the above named agents only relieve asthma when given in large or paralyzing doses — the central narcotics exerting their influence on the central nervous system; the emetics acting on the pneumogastric filaments, while the peripheral narcotics paralyze the vasomotor or sympathetic nerves, which supply the unstriated muscular fibres of the bronchial mucous membrane and blood-vessels. While all these agents relieve asthma, and indeed in some cases are indispensable, it is quite clear that in doing so they lower or depress the functions of the parts on which they act, and that they do not therefore come up to the ideal asthmatic remedy. The best among them are nitro-glycerin, one or two minims of a one per cent solution, every three or four hours by the mouth, and 1-20 or 1-10 of a grain of morphine hypodermically, once or twice a day.

What then is the remedy which may be given continuously for the alleviation of this disease and without the undesirable effects of the above named classes? Which drug will relieve asthma in stimulant doses? Such a drug I believe we possess in strychnine. Of course we must bear in mind that all stimulants are only supplementary agents which maintain the functions of the body without adding any direct material support to the same; but there is also good reason for believing that they cause the tissues to appropriate a larger amount of nutritive material than they would otherwise do, and in this way our stimulant drugs become tissue builders. It has been shown that the power of strychnine in this respect is greater than that of any other stimulant. This drug has a special affinity for the nervous system, which action is especially accentuated on the respiratory center and pneumogastric nerves. In stimulant doses it gives a supporting influence to the respiratory movements and unlike morphine, lobelia, belladonna or nitro-glycerin, it does not depress or narcotize the nervous system. Asthma being a spasmodic disease, in what manner does strychnine bring relief? How does it act as an anti-spasmodic? The most probable theory

of the spasmodic state is that there is at the beginning of the paroxysm, a superabundant discharge of nerve force through the pneumogastric nerves which throws the bronchial muscles into contraction. But whatever the intimate nature of this condition may be, it is evidence of degradation or nerve weakness, and strychnine, by elevating the tone of these nerves, increases the controlling power of the same.

A stimulant dose of strychnine will depend on the age of the patient and the length of time during which the drug has been given; although asthmatics, as a rule, will bear larger doses of strychnine than most other patients. Begin, as a rule, with 1-30 of a grain subcutaneously once a day, and gradually increase to 1-20 or to 1-10 of a grain, or more if necessary, to impress the system with its full stimulant effects. Do not waste your time with small doses. To these amounts of strychnine, small doses of from 1-400 to 1-600 of a grain of atropine may be added. It is best to administer these drugs in the evening, because asthma is nocturnal in its attacks, and your patient should be protected at night so he can sleep. Additionally to its hypodermic use this drug may be given in the following combination:

R̄

Phenacetini,	-	-	-	-	-	gr. lxiv
Quininæ Sulph.,	-	-	-	-	-	gr. xxxii
Ammon. Murias,	-	-	-	-	-	oz, iss
Pulv. Capsici,	-	-	-	-	-	gr. iv
Strychninæ Sulph.,	-	-	-	-	-	gr. 1 1/8
M. Ft. Capsulas,	-	-	-	-	-	No. xxxii

Sig. One capsule four times a day.

or in the following:

R̄

Strychninæ Sulph.,	-	-	-	gr. 1 1/8
Syr. Acid Hydriodici,	1	-	-	floz, ij
Syr. Hypophosph., aa,	{	-	-	

M. Sig. One teaspoonful four times daily.

In fact light cases of asthma require no hypodermic injection and do well enough when the above named preparations are given. In severe cases it is, of course, advisable to add morphine or nitro-glycerin to the strychnine and atropine



treatment, especially at the beginning. This treatment will break up the paroxysms, but even after they are broken many old asthmatics still remain in the most abject misery. They may be compelled to sit up day and night panting for breath, and still labor under the impression that they are suffering from asthma. This is a mistake, it is not asthma, but the natural state of exhaustion which follows asthma. The respiratory movements, as well as the whole nervous system, are almost completely paralyzed. It is the disorder and chaos following the flood. The dyspnœa is not paroxysmal as before, but is felt now on the slightest exertion. This stage of the disease is most important from a therapeutic standpoint—nitro-glycerin, lobelia, and other narcotics are of no use. Rest is most essential now. They must do absolutely nothing. Lie down if they can, or sit still. They should even be fed. I have known patients who were breathing comfortably bring on a most severe exhaustion-dyspnœa by merely undertaking to write a letter. During the rest treatment give food of the most nourishing character, such as freshly expressed beef juice, a cupful a day, beef powder, beef, mutton, milk, oysters, clams, etc. In this stage strychnine is also of the greatest value. Massaging is also to be used in desperate cases. Electricity is also of great service. So are rarified air, and calisthenic exercises obtained in the pneumatic cabinet treatment. To procure sleep at night, morphine may be added to the hypodermic injections of strychnine.

Success in treating asthma depends as much on the proper management of the individual as it does on the administration of drugs in the proper doses and at the proper time. Principles can only be carried out by paying attention to details, hence each patient must be under the complete control of his physician in regard to his food, exercise, medicines and everything else. This pertains particularly to old asthmatics who are constant sufferers. If the instruction given this evening is closely followed there are very few cases which will not yield to it, and as an illustration of what may be

done in desperate cases, I will conclude by relating the condensed histories of the two following examples, the second of which is still under occasional observation.

CASE I. A, aged forty-six, a sufferer from asthma for thirty-five years, the attacks becoming more frequent and severe during the last three years. For four weeks before coming under observation he had been unable to lie down on account of his disease. The injection of strychnine, gr. 1-25, and morphine, gr. 1-15, gave him almost immediate temporary relief. The morphine was discontinued after the second day, and one minim of a one p. c. sol. of nitro-glycerin was substituted. The strychnine was gradually increased and the nitro-glycerin omitted in the course of a week. Additionally, he was kept quiet, received nourishing food, and strychnine by the mouth. In three days he was able to lie down, and in ten days from the beginning of treatment the asthma ceased.

CASE. II. B, aged fifty, an asthmatic for twenty-five years. Daily attacks for one year, during which time he had been unable to lie down, day or night. Came under observation six weeks ago, and received about the same treatment as the previous case. The relief was prompt after each injection, but this had to be continued nightly for five weeks to keep the stubborn disease in abeyance. In two weeks he was able to lie down, and is now practically well.

---

---

## Goitre In West Africa.\*

BY C. F. CLOWE, M. D., SCHENECTADY, N. Y.

While not the cause of any great amount of physical discomfort—nor generally endangering life—a goitre is the source of great annoyance to the unfortunate possessor of it. We are generally called upon to treat it in this country for cosmetic reasons mainly. It is my purpose in this paper to consider the true or parenchymatos variety only.

---

\*Read at the meeting of the Schenectady County Medical Society, September, 1892.



As you all know, goitres are of several kinds. The vascular, or exophthalmic, is the most serious and the least amenable to treatment. In this variety we may consider the goitre as a symptom developing in the course of a disease; as the result of a lesion of the nervous system probably in the cervical sympathetic ganglia.

The true goitres, however, have connected with them no such serious symptoms as the exophthalmic. Indeed subjective symptoms are generally missing or are only present when the gland has reached such a size as to be not easily overlooked.

Given an incipient goitre, it is extremely difficult to decide whether it be a simple hypertrophy of the gland tissue, a cystic degeneration, or an increase in the fibroid constituents of the gland. All of these varieties we have arising from the same causes and presenting practically the same symptoms. It may be stated that the simply hypertrophied gland is evenly soft to the touch, smoothly rounded, and movable in all directions; but in practice I have often found cysts present upon introducing a hypodermic needle when the enlargement was to outward appearance an hypertrophy.

The fibroid or fibro-cystic varieties are not so easily mistaken, while their treatment is often more satisfactory. Clinically, it makes but little difference whether our diagnosis be exact or not. Most authorities consider the use of snow water as a cause of goitre. This certainly can not be said of the cases in Bihe. Bihe is in 13° so. latitude and upon the summit of the West African coast range. The elevation of the country varies from 5,500 to 5,900 feet by boiling point thermometer. The climate is pleasant. During the dry season frost is sometimes seen but snow never. For nine months of the year the daily range of temperature is from 60° to 90° F. We have there present, however, many of the natural and artificial conditions which are thought to produce this trouble. Elevation is one, scanty and poor food another. Most important, however, is the soil.

Many of the later writers on the subject believe that the use of drinking water containing iron is an important factor in the causation of goitre. The whole country of Bihe overlies a mass of iron ore. In many places this ore contains 60 per cent. of iron. Even the soil is so impregnated with it that it is of a brilliant red color. The little streams leave a thick deposit of oxide on their beds and grasses or sticks lying in them become incrustated.

The habit of carrying heavy burdens upon the head is also thought to bring about goitre. These people never carry anything, light or heavy, in their hands. Men often carry loads on their shoulders, but women invariably on their heads. It is stated that in England and America a greater per cent. of cases is found in women than in men. Of 239 cases of which I have the record, 187 of the patients were females. This proportion, however, is not a true one for that country, as, owing to a superstition, women seek relief from goitre much oftener than men. Another exciting influence is puberty. A large percentage of cases develop at that time. A large number of cases seem to be inherited. In that case they are very apt to develop at puberty, but sometimes appear shortly after birth.

A goitre consists of the enlargement of a whole or part of the thyroid gland. In the majority of my cases I have found the whole gland equally affected. The thyroid receives normally a large amount of blood, being filled with anastomosing vessels. A normal dilatation of the arteries, therefore, causes a considerable increase in the size of the gland. This often occurs in puberty or from sexual excitement and may remain permanent.

We must, however, generally consider goitre as the local expression of a general miasmatic or endemic infection. It obviously is not purely from local irritation or hyperæmia as, excepting in infected localities, hyperæmia from the same cause rarely remains permanent. Most cases of endemic goitre seem to be originally a true hypertrophy of the gland proper. Some, however, show a great excess of fibrous



tissue. This may have been a growth of the stromal connective tissue, or consist of degenerated epithelial cells.

Cysts are formed in all varieties of goitre and always from the same cause. As growth goes on and the pressure becomes greater, the connective tissue is the first to disappear, vessels are compressed and atrophy, fatty degeneration, begins and soon several or many vesicles coalesce and a cyst, larger or smaller is formed. Hæmorrhage may take place into a cyst and so increase its size by internal pressure. The contents of cysts vary little. Whenever I have examined microscopically the fluid removed, fat globules, epithelial cells and crystals of cholestrin have been always present. The fluid is albuminous and alkaline.

A goitre has no tendency to extend to surrounding tissues, and but rarely produces metastases. When metastasis has been seen it is possible the tumor was of a carcinomatous nature. The symptoms of goitre depend upon two things. The tumor and its pressure upon neighboring parts. The tumor itself is not easily mistaken. The skin over it is freely movable and it moves vertically during deglutition, except it be very large. The tumors vary greatly in size; some being so small as only to be discovered upon palpation, while others may hang below the sternum and weigh many pounds. The fibrous and fibro-cystic varieties present a characteristic nodular appearance to which the diagnosis may be made at a distance.

As the goitre increases in size it presses upon the neighboring parts, causing discomfort or danger. The pressure, however, is not always commensurate with the apparent size. Many very large goitres cause no unpleasant symptoms, while some which project but little externally may even cause death from pressure. Pressure upon the recurrent laryngeal nerve may cause aphonia or the nerves themselves may become involved in the growth with the same result. It has never been my fortune to meet with this symptom. Change of voice, however, has been so common as to be almost always present. Dysphagia I have found to be much complained of.

These people, however, are in the habit of swallowing their common food (corn mush) in masses as large as a hen's egg. It is little wonder it causes distress.

A prime factor in the treatment of goitre has always been to remove the patient from the influence of the exciting climate or district. This in my cases was impossible. All must be treated there. Iodine in some form seems to be most useful. Many incipient cases of the hyperæmic or parenchymatous variety I have seen totally disappear in two days from a single dose of 20-30 grs. of potassium iodide. During my first year in Africa I treated nearly all cases with this drug with uniformly good results. No case failed to be benefited by it. It always effected a reduction in size and generally, especially in fibrous cases, a complete cure if faithfully taken. A considerable objection, however, to its use in dispensary practice is its cost. Early in 1891 I began treating cases by the use of iodine in the form of the tincture. I took ten cases as they presented themselves, not selected, and gave each five drops of the tincture three times a day. Another series of ten cases were treated by the external application of ointment of biniodide of mercury, well rubbed in and the patient made to lie with neck exposed to the hot sun for an half hour. This was repeated so soon as the resulting blister had nearly healed. The result of these two series was interesting in the extreme. Of the ten treated with tincture iodine, internally, six which seemed to be parenchymatous passed almost entirely away while under observation. The other four, being fibrous, were only benefited to a degree.

In the ten treated by the ointment the result was equally as interesting. Those of the fibrous variety were largely reduced; two entirely so, while those of a parenchymatous nature were not improved to such a marked extent. From the result of these twenty cases I adopted the following treatment. Those presenting a fibrous nature were treated by the application of biniodide of mercury ointment (drachms  $\frac{1}{8}$ -ounces  $\frac{1}{8}$ ) as before mentioned.



Those of a parenchymatous or hyperaemic sort by the internal administration of iodine in addition to the application of the ointment. This plan I found to be uniformly successful. I have failed in no instance to reduce the size. Some of the large fibro-cystic, however, were exceedingly stubborn and I did not succeed in entirely displacing them. In thirteen cases containing cysts I removed the fluid from the cysts with a small silver cannula and injected a one-half strength tincture iodine allowing it to remain. This always set up a severe inflammation with the result of obliterating the sac but an immediate effect of an increase of size accompanied by much pain. In several cases it also brought on a severe laryngitis. I have also seen this result from the application of the ointment of biniodide of mercury. During the year I treated nine cases of a parenchymatous nature by interstitial injections of a mixture of carbolic acid and glycerine equal parts. Of this I can not speak very favorably. While no person received less than two treatments of two injections each, in only one or two cases did it produce any result. Extirpation of the gland I have never attempted for the reason that it never seemed necessary. If I were to formulate a plan of treatment it should consist of the internal administration of the iodide of potassium conjointly with the application of an ointment such as I have spoken of, but of the strength of one drachm one ounce only. Few people here care for as violent an effect as the application of the stronger ointment produces.

# THE Albany Medical Annals

JOURNAL OF THE

*Alumni Association of the Albany Medical College.*

HOWARD VAN RENSSELAER, M. D., EDITOR.

---

VOL. XIII.—No. 12. DECEMBER, 1892.

---

\$1.00 A YEAR.

---

## ANNOTATIONS.

**Epistaxis, an Easy and Effectual Method of Plugging.**—Undoubtedly plugging the nares by aid of Bellocq's cannula is an excellent method; but occasionally, especially in country practice, a Bellocq's cannula is not at hand, and some method easy, effectual and effected by material always within reach, must be resorted to. Such a method I have found in the following: A piece of old, soft thin cotton or silk, or oiled silk, about six inches square, (a piece of an old handkerchief will answer) is taken, and, by means of a probe, metal thermometer case, or penholder, or anything handy, is pushed centre first, "umbrella fashion" into the nostril, the direction of pressure when the patient is sitting erect being backward and slightly downward. It is pushed on in this fashion until it is felt that the point of the "umbrella" is well into the cavity of the naso-pharynx. The thermometer case or probe, or whatever has been employed, is now pushed on in an upward direction and then towards the sides, so as to pull more of the "umbrella" into the naso-pharynx. The thermometer case is now withdrawn. We have now a sac lying in the nares, its closed end protruding well into the pharynx behind, and its open end protruding at the anterior opening of the nares. If it be thought necessary, and is convenient, the inside of the sac may be brushed with some household astringent, such as alum solution, turpentine, etc. A considerable quantity of cotton-wool is now, by means of the thermometer case, pushed well back to the



bottom of the sack. Then the thermometer case being held firmly against the packed wool, the mouth of the sac is pulled upon, and thus its bottom with the wool packed in it is pulled forward, and forms a firm, hard plug wedged in into the posterior nares. We may now pack the sac full of cotton-wool, dry or soaked in some astringent solution. The mouth of the sac may now be closed by tying it just outside the nostril with a piece of strong thread; it is then trimmed by scissors and the ends of the thread secured outside.

The above method is easier than any I know when both nostrils have to be plugged. It might be suggested to oil the cotton or silk in order to render its introduction easy and to prevent it adhering to the mucous membrane, and to render it easy of removal; but I have never found any difficulty without the oil, as the bloodrenders the material wet and easy of introduction, while the oil does not facilitate removal, and may modify the effect of the astringents that may be used. The plug may remain in situ as long as any other nose plug. In removing the plug open the mouth of the sac, and with small dressing forceps remove the cotton-wool bit by bit; if there is bleeding, simply syringe the sac with weak carbolic lotion or Condyl's fluid and repack with clean cotton-wool, or wool impregnated with some antiseptic. If there is no bleeding when the wool is picked out, gently pull out the sac; or if it be adhering to the mucous membrane, syringe in a little warm water, and it may then easily be removed. This method has many advantages. (a.) It is easy, quickly accomplished, and effectual, and the materials are to be found in every house, and indeed, about everybody's person (I have plugged in this manner, simply using a handkerchief, one part of which was used for the sac, and the other torn into narrow strips, in place of the cotton-wool). (b). No damage is done to the floor of the nose or back of the soft plate by strings, etc.; (c) no disagreeable hawking, coughing or vomiting takes place while the plug is introduced; (d) there are no disagreeable strings left hanging down the throat, causing coughing or sickness while the plug is in; (e) the plug can be removed gently without any force, so that no damage is done to the mucous membrane and no return of hemorrhage caused. I employed this method frequently when in country practice, and do so now in bleeding after operation on the nares, and have always found it to be satisfactory. As the method has been of

great use to me, and as I am not aware that anyone has spoken of it before. I take the opportunity of mentioning it, in the hope that it may be of some use to some brother practitioner when confronted by an urgent case of epistaxis, and other means of plugging are not at hand.—Philip, in *The Lancet*.

**Feeding of Infants in France.**—A recent legal enactment in France prohibits the giving of any form of solid food to infants under one year of age without the authority of a prescription from a qualified medical man. The employment of a rubber-tube nursing bottle is also forbidden. Two hundred and fifty thousand infants die in France every year, and it is claimed that one hundred thousand of this number could be saved by intelligent care. The passage of this law is due in great measure to the efforts of the recently organized society for the protection of children of which Dr. Rouchard is the founder.—*Cincinnati Lancet and Clinic*.

**The Remedial Use of Apples.**—Chemically the apple is composed of vegetable fibre, albumen, sugar, gum chlorophyl, malic acid, gallic acid, lime and much water. Furthermore the German analysts say that the apple contains a larger percentage of phosphorus than any other fruit or vegetable. The phosphorus is admirably adapted for renewing the essential nervous matter, lecithin of the brain, and spinal cord. It is, perhaps, for the same reason, rudely understood that old Scandinavian traditions represent the apple as the food of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit renewing their powers of mind and body. Also, the acids of the apple are of signal use for men of sedentary habits, whose livers are sluggish in action, those acids serving to eliminate from the body noxious matters, which, if retained would make the brain heavy and dull, or bring about jaundice or skin eruptions and other allied troubles.

Some such an experience must have led to our custom of taking apple sauce with roast pork, rich goose, and like dishes. The malic acid of ripe apples, either raw or cooked, will neutralize any excess of chalky matter engendered by eating too much meat. It is also the fact that such rich fruits as the apple, the pear and the plum, when taken ripe and without sugar, diminish acidity in the stomach, rather than provoke it. Their vegetable sauces and juices are converted into alkaline carbonates, which tend to counteract acidity.—*North American Practitioner*.



**Varied Uses of the Newer Antipyretics.**—Introduced as modifiers of temperature some of the medicaments of the aromatic schema appear to have been especially useful in the multiform conditions presented to the general practitioner. Phenacetine especially, is widely called for in daily practice, and it seems to have given good results even in obstinate conditions. In sciatica, for example Dr. J. D. Blake, (*Medical World*, Oct.) directs the use of this medicament. He gives iodine, colchicum, etc., for the constitutional manifestations and Phenacetine for the pain. He writes: "Give Phenacetine, grs. V when the pains are severe. A few doses will suffice. Try it." Professor Hare (*Col. Clin. Rec.*, Aug.) gave in the treatment of supra-orbital neuralgia, cod-liver oil, adding Phenacetine, grs. V three times daily. Dr. W. Minaker, (*Med. World*, Sept.) says: "An excellent combination for the treatment of malaria, and one which answers equally well with the large doses of quinine, is Phenacetine, quinine and salol, of each 2 grs., repeated every 3 hours." A noticeable feature in the above instance of medication by Phenacetine is the small size of what seems to be considered an effective dose of Phenactine. Dr. Portier, (*La. Sem. Med.*, No. 19, 1892), recommends Phenacetine as a substitute for preparations of opium. He gives it in 2½ grain doses in combination with minute quantities of salicylic acid, cocaine and exalgin. Probably the Phenacetine alone, in five grain doses would be better, as salicylic acid is not usually well borne, and some practitioners do not like to prescribe cocaine in simple conditions.

**Evils of Catgut.**—Some interesting experiments have been made by Klemm, (*Bull. Gen. de Therapeut.*) in which was demonstrated from an aseptic standpoint the superiority of silk over catgut for suturing wounds. When catgut is employed in surgery suppuration occurs in spite of all precaution. This led Klem to suppose that the catgut, itself sterile, afforded a favorable culture medium for the development of such germs as get into a wound during an operation. To ascertain the correctness of his views, he made a number of comparative experiments on cats and rabbits with silk and catgut, with results as above indicated. The gut, after being used, and then placed upon a gelatine culture medium, developed as many as 2,500 colonies, while the silk similarly treated, showed only seventy-five. He, therefore, concludes that

catgut, notwithstanding the thorough method of sterilization, as employed by such men as Rivendin and Brunner, is unfit for employment in surgery.—*Medical and Surgical Reporter*.

**The Diseases and Accidents of Great Crowds.**—The medical history of the great Columbian celebration, which produced so much enthusiasm in this city last week, deserves some attention, and if it could be completely written would prove most interesting. There were probably 400,000 or 500,000 visitors during the week and perhaps a quarter of a million persons crowded the streets along which the parades were held. It is estimated that 200 persons were more or less hurt or taken ill. The census as gathered by newspaper reporters from the police reports and hospitals make the number about one hundred. Our readers will be interested in the list, as showing the accidents and diseases of great crowds. It is as follows:

Fainting, thirty-five; hysterical seizures, three; epileptic fits, eleven; sprains, three; run over, three; fractures, ten, one of the arm, two of the skull, seven of the leg; falls, eleven; cramps, one; dislocation, one; burned mortally, one; struck by a brick, one; "taken sick," thirteen. Total ninety-four.

This shows that fainting is the most frequent pathological phenomenon, that crowds are bad for epileptics, that falls and fractures are numerous and that delicate people are liable to be "taken sick." On the whole, the record is not a bad one, considering the enormous congregation of people. The reports also show that the sick and injured were promptly and efficiently cared for and our much abused ambulance service evidently did yeoman's duty on the occasion.—*N. Y. Med. Rec.*

**Treatment of Vomiting of Pregnancy.**—Routh states that in seven years' practice he has always been able to arrest the vomiting of pregnancy by brushing the cervix and lower cervical canal with a mixture of equal parts of iodine, iodide of potassium, spirits of wine and water.

In general the vomiting ceases immediately after the application. If the vomiting should recur, the cervix should again be brushed. Generally after this the vomiting will be permanently relieved.—*Therapeutic Gazette*.

**The Diagnosis of Head Injuries from Drunkenness.**—Dr. L. L. Von Wedeking writing to the *Lancet* on this subject, makes the following interesting statement:



A cell, or even a police station, is not a good place to form a correct diagnosis, and the frequency with which one finds symptoms very much obscured by alcohol is well known to police surgeons. A method which I employed while engaged in a very active emergency service in New York City, and which to-day is in extensive use in this class of cases, answers every purpose desired, and is more easy of application and devoid of the danger attendant upon the inhalation of ammonia. By pressure upon the supraorbital notches, compressing the nerve, a diagnosis of alcoholism may with absolute certainty be made in a few seconds, thus differentiating on the spot between coma due to alcoholism, injury or disease. Where no result is obtained, one may, with almost positive certainty, look for some other cause of coma. In no case have I failed with this method, and so certain became I of its infallibility that, without waiting to further examine for head injury where no result was obtained, I took the patient to the hospital sure of a "case." A case of alcoholism pure and simple will, upon the application of this pressure, immediately show very evident signs of life, and, be the coma ever so deep, the effect of the alcohol will for a short time be sufficiently removed to permit a thorough and rapid examination. The absence of result from this method should at once cause great suspicion of some cerebral trouble due to injury or disease. I would add, that to quiet hysterical convulsions, in hiccough, in alcoholic mania and for the detection of malingerers, there is, to my mind, nothing superior.—*Medical and Surgical Reporter*.

**Diphtheria and the Use of Hydrogen Dioxide in its Treatment.**—In this very elaborate paper, Dr. E. J. Bernstein says: (p. 361.) \* \* In my first case of diphtheria I began the use of Sulphide of Calcium, but finding that not only was it disagreeable to both taste and smell, and that it also soiled the bed linen and clothing of the patient, but that the disease continued to get worse, that the membrane which at first was limited to large necrotic patches on the tonsils, now covered the entire anterior pillars of the fauces and the uvula, which was now considerably swollen.

I discarded the nostrum and began the use of Hydrogen Dioxide, which I directed to be sprayed into the throat every hour of the day and night, gradually relaxing the number of night spray-

ings as the case went on to improvement. I also directed that the nose should be sprayed at least twice a day with the same solution. Within a few hours the mother said she noticed a change for the better in her child, and when I made my evening call it was quite perceptible. I also noticed, which fact I have since seen corroborated by others who had used the drug, the better color of the child. The lips, which before its administration were quite blue, were now of a healthy red color. The membrane in the throat had made no increase. By the following morning there was a decided decrease in the pseudo-membrane, and from now on began to disappear.

In conjunction with the above local treatment, I gave large doses of tinc. ferri chlo. in combination with tonic dose of quinia every three hours.

Cream of tartar lemonade was given ad libitum to appease thirst and to relieve congestion. The air of the room was regularly charged with steam, generated on a small alcohol stove, to which had been added an alcoholic solution of menthol, eucalyptol and thymol. It is well to say that the strength of the hydrogen dioxide was 50 per cent. of Ch. Marchand's 15-volume solution.

In three other cases which came under my observation, I followed out the same line of treatment, and each recovered without any untoward after effects. In the hope that some of you here this evening may be induced to try this plan of treatment I submit this paper.

---

## REVIEWS AND BOOK NOTICES.

**An American Text-Book of Surgery, for Practitioners and Students.** By Charles H. Burnett, M. D., Phineas S. Conner, M. D., Frederic S. Dennis, M. D., William W. Keen, M. D., Charles B. Nancrede, M. D., Roswell Park, M. D., Lewis S. Pilcher, M. D., Nicholas Senn, M. D., Francis J. Shepherd, M. D., Lewis A. Stimson, M. D., William Thompson, M. D., J. Collins Warren, M. D., and J. William White, M. D. Edited by William W. Keen, M. D., D., and J. William White, M. D., Ph. D. Profusely illustrated. W. B. Saunders, 913 Walnut St., Philadelphia, 1892.



This text-book of surgery ought to command the respect (as it certainly will) of every American surgeon. To study the different chapters, to look carefully into the compilation of facts, contained in the handling of the different subjects, should arouse the pride of all who are interested in the welfare of American surgery.

The authors have handled their subjects particularly well. They have brought to the practicing surgeon, the physician, all that is modern, all that has been tried and found worthy of imitation, up to date. One can but rejoice that the editors have so ably fulfilled their mission in that there is no repetition in the work, there is scarcely a sentence but is clear-cut, direct; no transmitting of text-book sayings, utterly worthless, and which are so apt to creep into the standard work of surgery and medicine. One feels strongly tempted to take up some particular chapter and refer to the excellent points therein contained, but the chapters are all so good that it is quite impossible to do more than commend all that the book contains.

The bacteriological portion is handled in a simple, concise, straightforward manner. Compared with the presentation of surgical pathology a few years ago, it is a marvel of exactness. The illustrations are many of them original and all very appropriate. One finds great pleasure in recommending such a book to busy practitioners and the thoughtful student.

The publishers have done their work exceedingly well. The print is clear and distinct, the index is complete and the subjects treated are all easily reached.—A. V.

**International Clinics.** A Quarterly of Clinical Lectures on Medicine, Surgery, Gynecology, Pediatrics, Neurology, Dermatology, Laryngology, Ophthalmology and Otology. By professors and lecturers in the leading Medical colleges of the United States, Great Britain and Canada. Edited by John M. Keating, M. D., Philadelphia, Consulting Physician for Diseases of Women to St. Agnes' Hospital, Philadelphia: Editor "Cyclopædia of the Diseases of Children." J. P. Crozer Griffith, M. D., Philadelphia, Clinical Professor of Diseases of Children in the University of Pennsylvania; Professor of Clinical Medicine in the Philadelphia Polyclinic. J. Mitchell Bruce, M. D., F. R. C. P., London, England, Physician and Lecturer on Therapeutics at the Charing Cross Hos-

pital. David W. Finlay, M. D. F, R. C. P., London, England, Physician to the Middlesex Hospital, and to the Royal Hospital for Diseases of the Chest; Lecturer on Clinical Medicine in the Middlesex Hospital Medical School. October, 1891, and January, 1892. Philadelphia: J. B. Lippincott Company, 1891, 1892.

When we look these volumes over we find great comfort, great satisfaction in seeing the teachers of old England and America bringing and presenting to the public, at large, their very best thoughts, their concise practical experience, and in such a way as to enable every careful, thoughtful practitioner to keep himself thoroughly abreast of what is going on in the profession. Almost every subject is here treated of, and the language is clear, concise and instructive.

The editors deserve the gratitude of the profession and they are to be complimented upon the most excellent manner in which they have performed their work.

The publishers have done credit to themselves. The work is worthy the careful perusal of every thoughtful practitioner.

The standard of excellence promised in the first volume has been fully maintained in each succeeding one.

**Over One Thousand Prescriptions** and favorite formulæ from Authors, Professors and Practicing Physicians.

Cloth 12mo., postpaid \$1.00, The Illustrated Medical Journal Co., Detroit, Mich.

The various Formulæ contained in this volume are *practical prescriptions* of new and old remedies for the various types of diseases that affect mankind. *They are the favorite ones*, of the various authorities, for the diseases indicated. The *Index* is full and complete thus rendering the whole book easy of access. The volume is copiously interleaved, so that on the blank pages can be recorded, by pasting, or copying with pen or pencil, any other prescription suitable for any disease that is on the opposite page of the book; the complete index thus indexes each new formulæ you may see fit to copy into the pages of the volume. The whole is comprised in a handy, cloth-bound volume of nearly three hundred pages.



















